

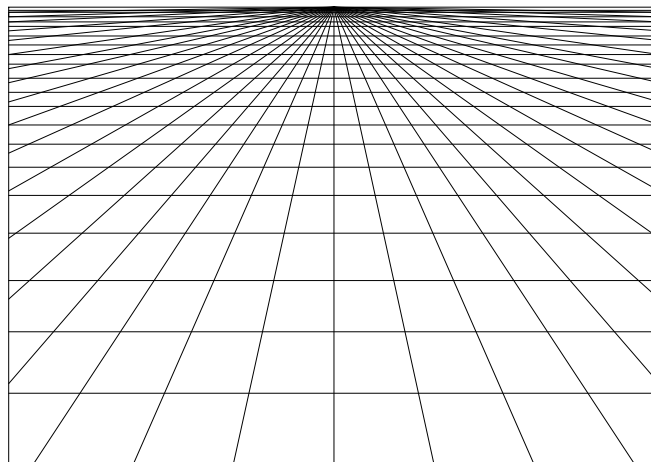


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How do Innovation Processes unfold in a Global Virtual Network?

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II. Abstract

This thesis aims to understand how innovation can happen in a global virtual network.

A body of literature concerning knowledge and geography has stated that innovative firms seem to be clustered. This seems to prevail even though new technology is made available, that eases long distance communication. Several reasons are put forward as explanations for this tendency. Firstly, it is argued that the local environments enable the diffusion of tacit knowledge, while this is hard, if at all possible, to achieve in a global network. Secondly, trust is seen to be important in collaboration and it is argued that this is hard to achieve without physical proximity. Thirdly, it is argued that the existence of "buzz" is essential in innovation processes, and this is by the majority of this literature viewed as a local phenomenon. And finally such a network needs strong coordination and governance mechanisms that may be hard to achieve in global networks. Thus, geographical proximity has been viewed as a necessity for innovative collaboration by a number of authors.

Another body of literature has, however, offered alternative relational proximities as possible substitutes or complements to geographical proximity. In this thesis I will discuss how tacit knowledge is being diffused, how trust is built, how "buzz" is exchanged and how the global network is coordinated. I will do this under the headings of alternative relational proximities. This will be cognitive proximity, social proximity and institutional proximity.

To study this I have chosen to look at an open source community called Koha, which develops and delivers a full featured library system which now is running in many libraries around the world.

Keywords:

Tacit knowledge, Trust, "Buzz" Knowledge and Geography, Global Networks, Virtual Teams, Relational Proximity

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1. Introduction

The research question of this thesis is: *how do innovation processes unfold in virtual, global networks.*

If we see innovation as a process where knowledge is the basic ingredient, learning becomes an important action. How the diffusion of knowledge, and learning, is happening in a global virtual network is thus a central issue to be discussed in this thesis.

Several theorists have stressed the fact that innovative firms seem to be co-located. (Asheim and Gertler, 2006; p. 291) This is used as an argument to underscore their view that learning and knowledge diffusion have better conditions when the participants are co-located.

According to these theories, physical proximity foster knowledge sharing and learning since it eases the diffusion of knowledge and the building of trust.

Other theorists have, however, presented different kinds of proximity that can be used as substitutes to overcome geographical distance. This challenges the existing theories on the necessity of geographical proximity in innovation networks.

I have chosen to look at an open source community who develops a library-system called Koha. Open source communities develop software, and share it by putting the new development out in the public domain without charge. The developers in the communities are situated all around the world.

The second chapter describes the research design and method used. The third chapter gives a description of the empirical background. In the fourth chapter, the theoretical perspective is outlined. This consists of literature concerning (1) the innovation process itself, (2) knowledge, and how it is diffused, and (3) global virtual networks. The discussion and analysis are in the fifth chapter and the conclusions in chapter six.

2. Research Design and Method

I have chosen to do a case study to investigate my research question. 'How' and 'why' questions are well suited to be answered through a case study, as opposed to 'where' or 'how many'. Experiments and historical methods can also be used for these kinds of questions. In this case, however, it will work against its purpose to control behavioral events which would be the experimental method, and the process I want to study is contemporary and not historical which rules out the historical method. According to Yin's Method-table it should be obvious that a case study will be best suited in this situation. (Yin, 2009; p 8)

In this chapter I will describe the research question, the proposition, and the unit of analysis under the heading Research design. In the next section I will describe how I have operationalised the research question into variables for investigation. Then I will describe my data collection method, my method of analysis, and finally the validity and reliability of this thesis.

2.1. Research design

According to Yin a research design is a logical plan on how the empirical data is going to be connected with the initial research questions and ultimately to its conclusions. (Yin, 2009; p 8)

Yin mentions five components as important in research design which is research question, research proposition, the unit of analysis, the logic linking data to its propositions and, criteria for interpreting the findings.

The research question of this thesis is: how do innovation processes unfold in virtual, global networks. This is based on a hypothesis that innovation does in fact happen in global networks, which is not uniformly agreed upon. My proposition is that innovation in global

networks is in fact possible under certain circumstances. If this proves to be true my next aim is to identify what those circumstances are.

I very early saw the open source movement as interesting, due to its global dimensions. I also identified them to be networks making innovations by building several kinds of software applications. The building of software¹ is normally dependent on user experiences, which is often non-codified knowledge. So I saw this as an extra challenging dimension for a global network. I soon, however, realized that many of these communities actually base their development on the developers own perceived needs, which means that the developers are also the users. This is typically publishing systems or other general systems where no professional expertise is necessary. I then started to look for a community who developed a professional system², and found the Koha-community who develops a library system. In this community the interaction between user and developer is a necessity for further development. I also chose this since it seems like this system has become a success in several parts of the world, which implies that the network is in fact able to deliver innovations.

2.2. Operationalisation of research question

In literature concerning innovation and geography some key arguments are put forward to claim that co-location works better than collaboration in global networks. These arguments are concerned with the ability to convey tacit knowledge, the ability of producing and maintaining trust, and the existence of buzz, in local networks. I have chosen to study the presence of these phenomena in this global network. In addition, I perceived the coordination

¹ The notion of software in general includes all kinds of software-programs, like i.e. communication protocols to make two systems communicate. The statements made about software in this thesis refer only to end user applications.

² A professional system is a direct translation of the Norwegian notion Fagsystem. This refers to an electronic system developed to support needs associated with a specific profession. I have not found an equivalent English expression

mechanisms used in this community as vital for how these processes took place. Thus, I have chosen to describe and discuss these mechanisms.

2.3. Data sources and collections

In this thesis I have used several sources of evidence to investigate the case.

Firstly I have interviewed some of the participants, both to clarify some facts but also to learn about their insights and experiences in working in such a network. Since this was only one of several sources of data, I reasoned that I needed interviews with 3 key persons to be able to understand how they were thinking and communicating within the network. This was done as semi-structured interviews where I started with a list of initial questions and let the communication be influenced by the interviewees and their understanding and insight in the process. The irony of these interviews was that in doing research of how such long distance communication was working, I actually had to conduct my interviews using just this technology. This means that the interviews were all done by using the IRC chat technology. The reason it had to be conducted this way was the long distance to all the interviewees. Telephone was also deemed as being too expensive and prone to bad telephone lines.

Secondly I did archive studies. This includes reading how they are representing themselves on different websites, articles written about how Koha came into existence and not least chat room meetings that have been conducted the last years. The pleasant thing about such communication is that it gives a paper trail on all that has been communicated. All previous meetings and more or less formal discussions that have ever been conducted in the chat room are open to be read.

Thirdly I registered as a subscriber to the two central mailing lists in the community. The Koha list is a forum where all general topics, spanning from support questions to political

discussions as to how the community ought to function, are being discussed. The -Koha-develølist is an e-mail list for the developers where more technical issues are in focus.

Finally I have used my personal experience in doing this analysis. Having several years as both system developer and project manager behind me, I know much about how these processes unfolds, although my experience is based on local collaboration. This lead me not having to ask about all the basic details when interviewing the developers and I will claim that it gives me a deeper understanding of what they are telling me, as I am familiar with both the central techniques and challenges in these processes. I will argue that it gives me insight in the field that can be compared to the method of -lived experienceø(Landman, 2006). My experience is of course also something that may bias my thesis and it is important for the reader to be aware of this. I will however do my best to serve justice to the findings done in this case study and to ensure that the analysis gets the objectivity and academic distance that is required. However, I think the gains of my experience exceed the risk of bias. As previously mentioned, I also needed to use this chat technology in communicating with the developers and I made some personal experiences in this process as well, which I have found valuable.

2.4. Analyzing the data

The research question in this thesis is based on the ongoing discourse of knowledge and geography. I wished to challenge some of the propositions made of the adherents of local networks by using one of the alternative theories that has been presented the last years. I use three of Boschmaø (2005) categories of proximity as a framework for analyzing the collected data. Thus this thesis should be seen as relying on a theoretical proposition. (Yin, 2009; p 130) This also means that my data collection was focused on the topics that in literature were seen as most relevant to influence innovative collaboration in local and global networks. This is, as mentioned above, seen to be diffusion of tacit knowledge, the development of trust, the existence of -buzzøand coordination.

The technique used to analyze these data should be labeled as an explanation building technique. The goal is to analyze the data by building an explanation about the case. (Yin, 2009; p 130) In this thesis I use some theoretical propositions done about local networks to show how these factors are also present in this global network, and then I can explain how the innovation in this network may happen.

2.5. Validity and reliability

By using several sources of evidence, and by doing explanation building using logic models, the internal validity should be assured. (Yin, 2009; pp 40-43)

I will be using the theoretical framework to categorize what kind of innovations and networks we are looking at in this case. We can assume that the validity of these findings will be higher in other innovation processes consisting of the same combination of elements. This will also be commented on in the analysis. (Yin, 2009; pp 40-43)

The reliability in this thesis is being assured by that both the interview guides and some transcriptions of IRC-meetings are included as appendixes to the thesis. In addition links to other empirical information used are stated in the reference list. All the documents used in the archives and the e-mail lists are also open for anyone to investigate. (Yin, 2009; p 45)

3. Empirical Background

The Koha system is a full featured library system, running in many libraries in several countries. Koha is the Maori word for gift. The foundation of this particular community was laid in New Zealand in 1999. Koha was developed for Horowhenua Library Trust (HLT) by Katipo Communications. HLT saw a need for changing their system due to worries that the

old system would not handle the year 2000 problem. As representatives from HLT were searching for a new system, they realized that not only the purchase costs, but also the operational cost would become sky high. Apart from the cost of support and maintenance of the system, the new Windows application would increase the annual telecommunication cost by 500%. Katipo, who had been working for HLT for many years, training staff and supporting the network, followed the RFP process in HLT. They discovered that the user requirements could be solved by developing an Internet application, which would also take care of the telecom cost problem.

On commission from HLT, Katipo developed the system and recommended it to be released under an open source software license. This means that everyone can download and run the software for free, without paying either Katipo or HLT. Neither Katipo nor HLT saw themselves in a role for marketing or supporting this system. The first reason for this was that Katipo was a small company, and for the sake of security for the future of the Library and its need for further support and development, the release as an open source software would make them independent of Katipo. With an open source system, they assumed that word of the mouth would market the system, and with more users they could support each other and help each other in the further development of the product. (Koha, official web-pages)

Open source software is defined as computer software for which the source code and certain other rights, normally reserved for copyright holders, are provided under an open source license. There are several rules and criteria to be met to be recognized as open software. In short terms we can say that the software is "open" when the software application and the source code are made public for anyone to download and edit. It is not supposed to have any restrictions as to how the person downloading the system can use it. (Open Source Initiative, web-pages) Developers that make changes are allowed, and asked, to put these changes back in the public domain. In this way there will be a lot of contributors to further development and improvement of these systems.

Open source development requires a working community for developing and maintaining the software. Normally these communities consist of developers located in different countries. Communication between the developers is done by chat (IRC), e-mails and Skype phone calls. Some communities also have gatherings where they meet physically.

Since there is really no owner to the product there is also no formal organization around these communities. In some communities, as in this case, they democratically chose who will be in charge for the different versions to come. They arrange town hall meetings in the chat room to elect who will be the next release manager.

In addition to filling the formal roles required in the process of developing and launching a new software release, there is also a set of values that is very clearly articulated. These values are being continuously debated, in the chat rooms as well as on the mailing lists. People or organizations that are seen to abandon these rules are punished by being excluded from using the logo for instance, and their reputation amongst the other developers and customers will suffer.

A common misunderstanding concerning open source is that all the developers do development for free. This may frequently be the case when the developers themselves are also the users of the software. What they gain from working on an open source base then, is that there are several contributors to make the system well-functioning. In the Koha case, however, the users are primarily librarians. In this particular case, the requirements are specified by the users of the system. This could be small changes, bug fixes or new features. The customers then get in contact with some of the developers working on Koha. There are several established vendors in several countries which sell consultancy work for further development of Koha. These vendors are listed on the Koha web pages. Here it is important to note that contrary to proprietary software, anyone can become a consultant or vendor. But to create a reputation for yourself, and to be allowed to be listed as a vendor on the official Koha pages, the community will have to know that you are a serious actor that plays by the rules. And these rules are, as mentioned above, very strongly manifested. Probably the worst sin to be committed is the withholding of code. This contradicts the values of the community since

it is all based on an ideology of sharing. If someone uses the software to further develop this without sharing it, in the purpose to get ahead of other vendors and customers, it will have a major impact on their reputation in the community.

I will now continue to the theory chapter where the theoretical framework for this thesis will be outlined.

4. Conceptual framework

I will here outline theory concerning (1) innovation, (2) knowledge and how it is diffused, and (3) virtual networks. My aim in this chapter is to discuss and clarify central concepts, to create a framework for the analysis.

4.1. Innovation

In this section I will describe what is meant by an innovation process. I will do this by describing how innovation came to be perceived as an important factor in modern society and by defining what the criteria are for it to be qualified as an innovation. Then I will outline two different dimensions for categorization of innovations.

Schumpeter early focused on innovation in his economic studies. He claimed it was not enough to focus on economic change by looking only at the distribution of resources. He saw economic development as a process of change driven by innovations. He divided innovations into the following 5 types: new products, new methods of production, new sources of supply, the exploitation of new markets and new ways of organizing business. He further saw innovation as a new combination of existing resources. (Schumpeter (1934), cited from Fagerberg, p 6)

In the beginning, the research made on innovations was related to science-studies and science policy -studies. (Fagerberg, 2006; p 2) This reflects a view that science is the major ingredient in innovation. In 1986 Kline and Rosenberg published a paper criticizing what they labeled as the -linear model of innovation. They were opposing to the view that innovations were seen as applied science, and underscored that innovations was just as often a result of knowledge coming from other activities (Kline and Rosenberg, 1986). Lundvall (1992) also focuses on the plural sources of inputs to the innovation process. He mentions everyday experiences as important for gaining technical knowledge and getting ideas about in what direction to search for new solutions. The everyday experiences he refers to involves learning by doing, increasing efficiency in production operations (Arrow, 1962), the use of complex systems (Rosenberg, 1982), learning by using and learning by interacting (Lundvall, 1988). (Lundvall 1992; p 9)

Lundvall also focus on the link between learning, knowledge creation and innovation.

“Our choice of perspective and subject is based upon two sets of assumptions. First it is assumed that the most fundamental resource in the modern economy is knowledge and, accordingly, that the most important process is learning...Second, it is assumed that learning is predominantly an interactive and, thus , a socially embedded process which cannot be understood without taking into consideration its institutional and cultural context...”
(Lundvall 1992; pp 1)

Later Lundvall stated that “the region is increasingly the level at which innovation is produced through regional networks of innovators, local clusters and the cross-fertilising effects of research institutions.” (Lundvall and Borrás 1999; p 39) He thereby became more explicit about his focus on spatial proximity. Lundvall also refers to Schumpeter’s notion of innovation as a recombination of existing knowledge.

We can thus see an innovation process as a process where the input needed is knowledge. When knowledge is diffused the process of recombining the knowledge can happen. The knowledge may have been produced by R&D processes but may just as well come from experiences done in production processes, interaction with users or the market, or other

everyday activities. Asheim and Gertler also states that production of tacit knowledge occurs simultaneously with the act of transmission. (Asheim and Gertler, 2006: p 293)

Innovation theory makes a distinction between invention and innovation. In Thomas Hughes' model of the evolution of Large Technological Systems (LTS) he defines the phases in the development of a LTS. The three first phases in his model is invention, development and innovation. An invention is a new idea or experience and the typical actor in this phase is the inventor. Then this invention can be followed up by developing a product that can be used for testing the product. In this phase the engineer is the central actor. If the product that resulted from the development succeeds it is ready to be introduced to real life use. The phase of helping the product into use, either by combining the product into a complex system of manufacturing, sales and service facilities or establishing a new company is what Thomas Hughes calls the innovation phase and then the entrepreneur is the central actor. (Hughes 1993; pp 57-66) It is not enough to get an idea or to develop an idea to call it an innovation. It is not viewed as an innovation until it is a developed product that is introduced to real life. It is important to realize that Thomas Hughes and others who have made this distinction stresses that the transition between these two phases can be very blurred. The development of an innovation normally happens in many steps.

This leads us to the concepts of incremental and radical innovations. This is the classification of an innovation according to how radical it is, compared to existing technology (Freeman and Soete (1997), cited from Fagerberg). Incremental innovations describe smaller improvements of an existing product or process, often based on user-experiences. Radical innovations are used about innovations that represent something very different and new to the market or to the world and it may be used on several dimensions.

“When distinguishing between incremental and radical innovations, we may refer, primarily either to the technical or to the economic dimension. Some innovations, incremental in technical terms, may have a crucial impact upon the economy” (Lundvall 1992; p. 12)

Kline and Rosenberg underscored that this makes it difficult to date an innovation at a specific time since innovation is seen as dependent on accumulation of knowledge and that this is a continuous process.

“...it is a serious mistake to treat an innovation as if it were a well-defined, homogenous thing that could be identified as entering the economy at a precise date – or becoming available at a precise point in time...The fact is that most important innovations go through drastic changes in their lifetimes – changes that may, and often do, totally transform their economic significance. The subsequent improvements in an invention after its first introduction may be vastly more important economically than the initial availability of the invention in its original form.” (Kline and Rosenberg, 1986; pp 283)

Another important distinction done in innovation literature is the distinction between a product innovation and a process innovation.

“Product innovations are embodied in the outputs of an organization – its goods or services... Process innovations are often oriented toward improving the effectiveness or efficiency of production by, for example, reducing defect rates or increasing the quantity that may be produced in a given time.” (Schilling, M.A. (2008), p 43)

Sometimes a product innovation can lead to a process innovation. The innovations of PCs and mobile phones are typical examples of product innovations. These innovations have further made it possible to organize business in new and better ways, and these new ways of organizing can be seen as process innovations.

To sum up this section we can state that innovation is seen as one of the major factors for economic growth in modern society. The basic ingredient in the process of innovation is knowledge and the process of learning. The diffusion of knowledge thus becomes a central activity. This knowledge may be produced by R&D processes but is just as often insight gained by doing everyday activities like using a technology, interacting with users or markets etc. Innovations are distinguished on different dimensions, they can be incremental or radical and they can concern products or processes.

How knowledge is created and diffused then becomes an important issue in making innovations. How this is done is often explained by the kind of knowledge in question. Thus, the next section will look at knowledge itself, and the different characteristics that influences on its ability to be communicated.

4.2. Knowledge and geography

We have now have stated that knowledge is a basic premise for innovation. Both the process of knowledge creation and knowledge diffusion thereby become central processes for innovations to happen.

Lundvall (1992, 1999) and Asheim and Gertler (2006) focus on knowledge creation in the process of human interaction. This calls for the actors to be co-located. Much attention has also been given to how the diffusion of knowledge relate to geography. Characteristics of knowledge have been defined in literature, and these characteristics are associated with how easily transmittable the knowledge is.

I will now define what is meant by synthetic and analytical knowledge bases, tacit and codified knowledge, and how they relate to each other. Then I will look at how these concepts are related to geography.

The categorization of knowledge has been done from the early philosophers. Johnson et al. (2002) refers to "the Aristotelian distinction between on the one hand "episteme" knowledge that is universal and theoretical and "techne" knowledge that is instrumental, context specific and practice related" (Johnson et al. 2002; p 250).

Kant's division of knowledge can be understood in the same line but he uses the concepts of synthetic and analytic knowledge. The analytic proposition is true by logic while the synthetic proposition must be experienced. An example of an analytic proposition could be "All bachelors are unmarried". While an example of a synthetic knowledge could be "All bachelors are happy".

The distinction between an analytical and synthetic knowledge base refers to what kind of processes that leads to the production of knowledge, in literature industries are often categorized according to this. Asheim and Gertler have stated that synthetic knowledge bases are present in industries where innovations normally are a result of application of, or a novel combination of existing knowledge. This often occurs as a response to a problem or a new need that is identified. The knowledge production process is seen as an inductive process of testing, experimentation or practical work. (Asheim and Gertler 2006; p 295-296) This means that experience is an important ingredient in the production of synthetic knowledge.

The analytical knowledge is seen to be dominating in industries where scientific knowledge is important and where knowledge creation often is based on formal models, codified science and rational processes. Central activities in this kind of knowledge production are both basic and applied research and systematic development for products and processes. (Asheim and Gertler 2006; p 295-296)

The difference between the two knowledge bases can be shortly summarized to say that the analytical knowledge base is founded on logic and deduction while the synthetic knowledge base is more based on experience and induction.

The notion of tacit and codified knowledge is closely linked to the concepts of synthetic and analytical knowledge bases. Tacit knowledge is seen as knowledge that is context dependent and personal and thus hard to articulate.

“Tacit knowledge was the name given to knowledge that cannot be articulated by Michael Polanyi, who famously captured its essence by saying: ‘We know more than we can tell’, (Polanyi, 1966)” (Morgan 2004; p.7).

Codified knowledge is knowledge that is articulated one way or another. It can be in the form of scientific articles, recipes or software code.

In a synthetically based industry knowledge is often produced from *“learning-by-doing”* activities. In these activities the tacit knowledge will be more important than in the

analytically based industries. In industries based on analytical knowledge the knowledge creation is more often based on formal models and then the knowledge tends to be more codified. (Asheim and Gertler 2006; p 295-296) However, it is important to realize that codified knowledge depend on tacit knowledge to be interpreted in the right way.

(Nightingale (1998), cited from Moodysson, Coenen and Asheim; p 4)

There seems to be some disagreement as to what extent tacit knowledge is possible to codify. In Morgan's opinion it seems as if the costs of codifying tacit knowledge is too high, the knowledge will remain tacit.

“The relevant question is not whether some knowledge is in principle articulable or necessarily tacit, but whether the costs of codification are sufficiently high so that the knowledge remains in fact tacit... The relative significance of the tacit dimension will depend ... on a combination of cost and content” (Morgan 2004, p.7).

Others seem to claim that when tacit knowledge is involved, the only way to communicate this is by face-to-face interaction. “It (tacit knowledge) is knowledge that can only be expressed through action, commitment, and involvement in a specific context and locality.” (Ernst and Kim 2002; p 1423) Storper and Venables talk about codifiable and uncodifiable information. They define information as codifiable if it is associated in a determinate way with the symbol system in which it is expressed. (Storper and Venables 2004; pp 353-354) In their definition it is implicit that some information by nature is not codifiable.

Asheim and Gertler underscores that innovative activity seems to be clustered and their major explanations relate to learning, and the diffusion of tacit knowledge. Learning is seen as a social and interactive process that needs co-location, and tacit knowledge can be hard to codify and difficult to exchange over long distances.

The challenges of conveying tacit knowledge in a global network would explain the clustering of especially synthetically based industries, since they are more closely associated with tacit knowledge. It seems, however, that even analytically based industries tend to cluster. Storper and Venables (2003) reintroduced the notion of “buzz” as localized knowledge circulation that

is dependent on a shared frame of experience. They see this as information which is only locally transmitted, often by word of the mouth. An example of this could be failures in scientific experiences which is often not reported but still may give valuable information. This is one of the explanations Asheim and Gertler puts forward to explain why clustering not only occurs in synthetically based knowledge bases. (Asheim and Gertler 2006; p 297-298)

Storper and Venables have listed four major properties of F2F contact that makes this kind of communication important. The effect of F2F contact which happens through the effects of these four features is termed buzz.

Firstly, F2F is an efficient communication technology. They argue that face-to-face communication is superior to other forms of communication in several ways and refer to Nohria and Eccles who states that in face-to-face interaction there is an unusual capacity for interruption, repair, feedback, and learning. One of the reasons put forward to explain this is that this kind of interaction makes it possible for two people to be sending and delivering messages simultaneously (Nohria and Eccles 1992; p 292). They also underscore that you do not only have the dimension of verbal communication, but also physical, contextual, intentional and unintentional communication in F2F interactions. And they draw on psychological theories on how creativity occurs when different levels of information are processed at the same time.

Secondly they focus on trust and incentives in relationships. They state that F2F-contact minimize the incentives for being free riders. Both the fact that F2F-contact makes it easier to grasp the real intention of another person, and that visual contact and emotional closeness is crucial in building human relationships are used to underscore the importance of this kind of contact. They also claim that F2F promotes the development of trust since partners expend time, money, and effort in building a relationship. For the same reason they claim that virtual communication like e-mail has such a low cost that it limits the value of the relationship bond.

Thirdly they state that, especially in F2F-contact, since it is so costly, it is necessary to screen people you want to interact with. The need for screening will differ between the different

industries. In academia for instance such screening does not always require co-location while in other industries like fashion and many of the arts there are many localized networks. They state that the screening is complex and in need of tacit information, and thus the F2F contact and socialization is crucial.

The last property Storper and Venables focus on is how physical co-location can give us a rush and stimulate motivation. F2F is a means to information production and not only exchange. And it stimulates imitation and competition. They refer to Scitovsky (1976) to show how we search for pride of status and position which thereby become a motivating factor.

Bathelt et al (2004) is also concerned with this concept in the discussion of local buzz and global pipelines. They describe it like this:

“...Buzz refers to the information and communication ecology created by face-to-face contacts, co-presence and co-location of people and firms within the same industry and place or region. This buzz consists of specific information and continuous updates of this information, intended and unanticipated learning processes in organized and accidental meetings, the application of the same interpretative schemes and mutual understanding of new knowledge and technologies as well as shared cultural traditions and habits within a particular technology field, which stimulate the establishment of conventions and other institutional arrangements. Actors continuously contribute to and benefit from the diffusion of information, gossip and news by just ‘being there’ (Gertler, 1995).” (Bathelt et al 2004; p 38)

Asheim, Coenen and Vang (2005) argues that the use of the buzz-concept have been misleading on three accounts. Firstly, it does not make a distinction between buzz and F2F communication. By not making this distinction, it fails to distinguish between the importance of F2F and buzz in different industries. And it leads to an exaggeration of the importance of cities as a necessary environment for innovation. They find the concept ambiguous and not precise. In the case of Storper and Venables it refers to means, sources and effects of communication at the same time. In the definition from Bathelt et al it also lacks a clear definition. (Asheim, Coenen and Vang 2005; pp 2-7)

Asheim et al wish to stress the noise concept (the buzzing of insects) and draw on Grabher (2002) who describes actors who

“...are not deliberately ‘scanning’ their environment in search of a specific piece of information but rather are surrounded by a concoction of rumors, impressions, recommendations, trade folklore and strategic information...” (Grabher 2002; p 209)

They suggest that buzz should refer to ñnon-deliberate knowledge and information exchange propensitiesö, and they claim that buzz can be transmitted both electronically and F2F and thus can be both local and global. They further argue that F2F should be understood literally in the sense that two or more persons are physically co-present in a way that allows for mutual and visual and physical contact. (Asheim, Coenen and Vang 2005; p 7)

By ñunpackingö these concepts and distinguishing between F2F and buzz, Asheim et al argues that the importance of the two factors varies across industries relying on the different knowledge bases.

Analytically based industries are not seen to be very dependent on either buzz or F2F contact.

“... as scientific knowledge often is abstract and codified in the form of publicly available articles in journals and conference papers, face to face and buzz do not appear to be of major importance for accessing scientific knowledge itself” (Asheim, Coenen and Vang 2005; p 7)

They do, however, stress that F2F contact and buzzing might in fact give companies a competitive advantage as it helps accessing and absorbing scientific knowledge before their competitors do.

When it comes to synthetically based industries they see F2F as an important way of communicating as the several dimensions makes it easier to exchange the relevant information to identify problems. In this process the exchange of tacit knowledge is central, and this is eased by F2F communication. Buzz, however, is thought to have minor importance as they see the bilateral communication (user-producer i.e.) as the major source of knowledge

collection. And they claim that buzz, in the context of synthetically based industries, is in a mode of knowledge exchange and not information exchange. They distinguish between these two concepts because of the cognitive features of the individual as a necessary component for the former to exist. (Asheim, Coenen and Vang 2005; pp 7, 20)

The only industries where they view buzz as an important factor are the industries relying on a symbolic knowledge base since it is more related to tastes, trends and the latest gossip.

To summarize this section, we have seen that it has been argued that both the production and diffusion of knowledge is dependent on co-location of the actors involved. The type of knowledge involved is also seen to influence on the need of geographical proximity. Synthetic and analytical knowledge bases are associated with tacit and codified knowledge respectively and tacit knowledge is assumed to be hard to diffuse outside the local environment. It is also stressed that there is no strict line between tacit and codified knowledge and there is always need for tacit knowledge to interpret codified knowledge. Much literature has stressed the importance of F2F and buzz in innovation processes. Some have treated these two concepts as one while Asheim et al have unpacked this concept and sees F2F and buzz as two separate dimensions. And even though they state that buzz can be transmitted electronically they still stress that at least synthetically knowledge-based industries are dependent on F2F contact because of the need for diffusing tacit knowledge.

4.3. Global Virtual Networks

As we have stated in the earlier sections, knowledge is seen as a vital component for innovation and thereby economic growth. Inter-organizational networks are means by which organizations can pool or exchange resources and jointly develop new ideas and skills. Collaborative networks have been a normal way of organizing production processes in craft-based industries. As the knowledge-based industries are growing, the role of networks in these

industries has gained importance (Powell and Grodal 2006; p.59).

In this section I will firstly show how global virtual networks, or virtual teams, are defined and what characterizes them. Then I will describe what implications these characteristics are said to have on the collaboration within the network.

“In its most abstract form a network is a structure where a number of nodes are related to each other by specific threads. “. These relations are a result of the investment done by both parties and they give both possibilities but also restrictions to the actors. The stronger the thread is the more content it is within it but this will also restrict the nodes possibility to change. They do no longer operate in isolation. (Håkansson and Ford 2002; p 133-135)

Already in 1973 Granovetter introduced the concepts of strong and weak ties in networks as a mean of describing how relations between the nodes in a network may differ according to strength. There is a strong tie between people who interact on a regular basis while a weak tie is more an acquaintance or a friend of a friend. Strong ties are based on common interest, and information shared in strong ties tends to reinforce the existing views. It is also seen to be more effective in the exchange of complex information. Weak ties on the other hand introduce novelty, and it has a long reach, but is not capable of conveying as rich information as the strong ties. (Powell and Grodal 2006; pp 61-62)

Networks can thus be seen as actors or organizations having some sort of relation, strong or weak in where knowledge can flow. The strength of the relations between actors in the network gives some implications as to how easily knowledge will be diffused in the network.

“A key advantage of close-knit networks may be due to their superior ability to transfer tacit knowledge (Van Wijk, Van den Bosch and Volberda 2003)”. (Powell and Grodal 2006; p 66)

Others also mentions the positive and negative aspects associated with both strong and weak ties.

“For organizations in rapidly developing fields, heterogeneity in the portfolio of collaborators allows firms to learn from a wide stock of knowledge. Organizations with broader networks are exposed to more experiences, different competencies, and added opportunities (Beckman and Haunschild 2002). Such access creates an environment in which ‘creative abrasion’, the synthesis that is developed from multiple points of view, is more likely to occur. In this view, ‘innovation occurs at the boundaries between different mind sets, not within the provincial territory of one knowledge and skill base’”. (Powell and Grodal 2006; p 59)

It seems like homogeneous networks with strong ties is seen as more capable of transferring tacit and synthetic knowledge and thereby is more associated with incremental innovations. The weak tie dimension of the heterogeneous network, which is associated with novelty, makes it suitable for radical innovations. The findings referred to by Powell and Grodal concerning the divergent needs of ties between the steel industry and the semiconductors underscores this.

“Recognizing that weak ties serve as bridges to novel information, while strong ties are useful for both social control and the exchange of tacit knowledge, they find divergent results. In the steel industry strong ties are positively associated with performance; while in semiconductors weak ties are more efficacious. They suggest these findings reflect the importance of search and product innovation in semiconductors, and a focus on improvements in the production process for steel.” (Powell and Grodal 2006; p. 69)

The networks we are interested in here are networks collaborating to create and diffuse knowledge in order to create innovations. Gereffi et al have categorized networks into five types by characterizing the complexity of the transaction, the ability to codify transactions and the capabilities of the supply base. These types are (1) the markets, (2) modular value chains, (3) relational value chains, (4) captive value chains and (5) hierarchy. Our case will be typically categorized as a relational value chain where the complexity of the transactions is high, the ability to codify transactions is low and the capabilities in the supply-base are high. In relational value global value chains the balance between the customer and the supplier is symmetrical since both parties contribute key competencies. The exchange of complex tacit information are in these networks most often accomplished by face-to-face interaction and

governed by high levels of explicit coordination. Many authors have also highlighted the role of spatial proximity as important for supporting these relations but according to Gereffi et al, trust and reputation might also function in spatially dispersed networks, where relationships are built up over time or are based on dispersed family or social groups. Gereffi et al, 2005, pp 84-88)

Powell and Grodal have described a particular kind of networks, which they label -distributed networks of practice. Here the participants are dispersed and communicate through information technology, and they use the open source software movement as an example.

“Distributed networks of practice are the organizing bases for many technical communities, suggesting both that sources of knowledge is more widely dispersed and that governance mechanisms are emerging to orchestrate distributed knowledge. The open source software movement is but one highly visible example of this trend (O’Mahony 2002; Weber 2003), which illustrates how advances in information technology have greatly facilitated virtual networks” (Powell and Grodal 2006; p.58)

Jarvenpaa and others have used the label -Global Virtual Teamsøon network organization enabled by advances in information and communication technology (Davidow and Malone 1992, Jarvenpaa and Ives 1994). They have focused on how trust can be built and maintained in such groups.

Jarvenpaa and Leidner base their further definition of global virtual teams on Kristof et al. (1995) who see these teams as temporary, culturally diverse, geographically dispersed and electronically communicating work groups. By temporary they refer to Lipnack and Stamps (1997) who defines this as groups whose members may have never worked together earlier and who cannot expect to work together as a group again. (Jarvenpaa and Leidner 1999: p 792)

In addition to be seen as flexible (Mowshowitz (1997) and Snow et al. (1996) cited from Jarvenpaa and Leidner p 791), these teams are also said to be more prone to low individual commitment, absenteeism and social loafing (O’Hara-Deveraux and Johansen, 1994 cited

from Jarvenpaa and Leidner p 791). Thus, trust is seen as a particularly important factor for a virtual network. Trust can be seen as a state of positive, confident although subjective expectation of the behavior of the other party, in a situation which entails risk. (Baba, M. 1999; pp 331-346 cited from Panteli)

According to several authors in the network literature trust enables networks and teams to function effectively. Lipnack and Stamps (1997) states that: "in the networks and virtual teams of the Information Age, trust is a -need to have quality in productive relationships". Panteli describes how trust influences on network cooperation this way: "Trust enables cooperation and becomes the means for complexity reduction even in situations where individuals must act with uncertainty because they are in possession of ambiguous and incomplete information." (Panteli 2005; p. 1)

The question asked concerning virtual teams has thus been if trust is possible to create and maintain in a virtual network. De Meyer (1991, cited from Jarvenpaa and Leidner) has recommended limited use of virtual settings in global teams which should be supplied by lengthy face-to-face gatherings. Handy (1995, cited from Jarvenpaa and Leidner) questions whether virtual teams can function effectively without face-to-face interaction and states that "Trust need touch". "Paradoxically though, only trust can prevent geographical and organizational distance from becoming psychologically distant (O'Hara-Deveraux and Johansen, 1994)." (Jarvenpaa and Leidner 1999; pp 791-792) According to Nohria and Eccles (1992) and O'Hara-Deveraux and Johansen (1994) face-to-face meetings are irreplaceable in the process of building up or repairing shattered trust. (Jarvenpaa and Leidner; pp 791-792)

We can sum this up by stating that the number of global innovation-networks seems to grow as knowledge has become an important resource in our society. Networks can be seen as a number of nodes, usually representing organizations or persons, with threads between them. These threads or ties as they are also labeled can be strong or weak. Strong ties have the advantage that it is suitable for exchanging rich and complex information while the disadvantage is the lack of novelty. In relations with weak ties novelty is seen as an advantage

while it is more prone to misunderstandings and may lack the ability of identifying valuable information. Virtual teams are a form of network which is seen as a temporary, culturally diverse, geographically dispersed and electronically communicating work group. In global virtual teams trust is seen as a basic premise for the collaboration to function well. It is argued by some that trust cannot be created or built over time without face-to-face meetings.

4.4. Theoretical implications

In this section I want to make some associations linking the theory on innovations, knowledge and networks. As I read these associations implicitly in the different theories I find it important to clarify these associations.

As we saw in the knowledge section it is made a distinction between synthetic and analytical knowledge-bases, where synthetic knowledge-bases consists of knowledge created by experience and induction while analytical knowledge-bases is more often created by logical reasoning and deduction.

It has also been made an association between synthetic and analytic knowledge and tacit and codified knowledge respectively. Synthetic knowledge, being based on experience and being context dependent is seen to contain a high rate of tacit knowledge. The analytical knowledge base is not that context dependent, and do often consist of formalized models, which leads to a higher degree of codified knowledge. As it has been argued, the tacit knowledge is hard to communicate outside the local area whereas codified knowledge is transmittable in a global network. We thus associate synthetic and tacit knowledge with local networks and analytic and codified knowledge with global networks.

<i>Local</i>	<i>Global</i>
<i>Synthetic</i>	<i>Analytic</i>
<i>Tacit</i>	<i>Codified</i>

If we move to the network sections, we saw that the relations between the nodes in the network have been discussed by several authors. Håkansson and Ford labels this dimension *thread* and states that these *threads* can differ in strength. In the same way as Granovetter's earlier concepts of ties can be strong or weak. Strong ties were defined as relations where the actors interact on a regular basis. They were based on common interest and had the ability of exchanging complex information. Weak ties were seen to have a longer reach, and they may introduce novelty while not capable of conveying complex information.

The concepts of strong or weak ties could also be related to the above dichotomy. Firstly, in the local networks the actors are perceived to interact regularly and to live in the same *conceptual world* which makes it possible for them to convey complex information. This is very similar to Granovetter's description of strong ties. The weak ties had a longer reach, but also the ability to introduce novelty, similar to how we view a global network.

I would thus like to extend the first dichotomy, which is based on the knowledge and geography theory with the theory from the network literature:

<i>Local</i>	<i>Global</i>
<i>Synthetic</i>	<i>Analytic</i>
<i>Tacit</i>	<i>Codified</i>
<i>Strong ties</i>	<i>Weak ties</i>

Finally, in the network section we already made an association between strong and weak ties and radical and incremental innovations. As we remember radical innovations are seen as something completely new, not building on the existing technology or knowledge base while incremental innovations are seen as improvements of an already existing technology. Powell and Grodal used an example from the steel-industry and semiconductors where strong ties were suitable in the steel industry since their focus was on improvements of the process while the search and product innovation in semi-conductors gained from weak ties. I thus want to add the dimension of radical and incremental innovations to the dichotomy.

<i>Local</i>	<i>Global</i>
<i>Synthetic</i>	<i>Analytic</i>
<i>Tacit</i>	<i>Codified</i>
<i>Strong ties</i>	<i>Weak ties</i>
<i>Incremental</i>	<i>Radical</i>

However, as with the original dichotomy, this dichotomy only offers associations between these concepts, and some further explanations around these associations are needed.

The essence to be taken in this dichotomy is that since the actors in a local network is seen to have strong ties, which is seen to conserve rather than to challenge the existing knowledge base , it seems more suited for incremental innovations than for radical innovations. It lacks the dimension of novelty, while it has the ability of diffusing rich and complex information. In a global network, however, where the relations between the actors are seen to be weak, the diffusion of tacit and incremental knowledge is seen to be difficult while the advantage is the access to novel information. This means that the global network is more apt to come up with radical innovations while not so suited for situations where tacit and synthetic knowledge is seen as vital, which is associated with incremental innovations.

I perceive this to be the reason why the focus on local buzz and global pipelines (Bathelt, 2004) has gotten increasing attention the last years. It is believed that an innovative environment needs both the possibility to exchange tacit knowledge, originated from a synthetic knowledge base, while it also needs new impulses from a global environment as innovation drivers. Bathelt, amongst others, have presented the local clusters with several global pipelines as the way to combine these features.

We have now seen several factors used as explanation to why spatial proximity is important where diffusion of tacit knowledge, the building of trust and buzz is seen as central issues to favor localized collaboration. There is, however, a body of literature concerning how to overcome geographical distances. In the next section we will look into literature about other

kinds of proximity, where the question is if these kinds of proximity can complement or substitute geographical proximity.

4.5. Can geographical distance be overcome?

Alternative kinds of proximity that can either substitute or complement geographical proximity have been discussed in literature. Relational proximity has been used as an explanation to how geographical distance can be overcome. Communities of practice is a kind of network where the actors have strong relations due to their shared expertise.

“The cluster of individuals that share a similar set of skills and expertise has been dubbed a ‘community of practice’ (Wenger 1998) or a ‘network of practice’ (Brown and Duguid 2001). ...Such fluid groups are important to the circulation of ideas. ” (Powell and Grodal 2006; p. 71)

In 2005 Boschma introduced a list of 5 different kinds of proximity based on the work of the French School of Proximity Dynamics. Even though some of these types of proximity are closely related, he divided them into 5 types for analytical reasons, to make it easier to identify exactly what are the key-factors in the different kinds of innovation processes.

First is the cognitive proximity which can be seen as a precondition for all interactive learning and knowledge diffusion. This concept is closely linked to Cohen and Levinthal's (1990) concept of absorptive capacity which is seen as the ability to identify, interpret and use the new knowledge. Too little cognitive proximity will lead to misunderstandings while too much can lead to the lack of novelty and lock-ins.

“...a tradeoff needs to be made between cognitive distance, for the sake of novelty, and cognitive proximity for the sake of efficient absorption. Information is useless if it is not new, but it is also useless if it is so new that it cannot be understood.” (Noteboom 2000; p 153, cited from Boschma)

The solution presented to avoid the consequences of too much proximity is to ensure a common knowledge base with diverse complementary capabilities.

The next type is the organizational proximity which is defined as relations within or between organizations. Organizational proximity controls uncertainty and opportunism in the knowledge creation process, but too much proximity can lead to lack of flexibility. Boschma presents loosely coupled systems as a solution to avoid the negative consequences of too much organizational proximity.

The third kind is the social proximity which is defined to be the social relations between the actors on a micro level. "Relations between actors are socially embedded when they involve trust based on friendship, kinship and experience" (Boschma 2005; p. 66) According to Boschma social proximity may be required in the process of learning and innovation. The reason for this is that trust-based social relationships facilitate the exchange of tacit knowledge. Social proximity is seen as having a more open attitude towards communication than the market orientated structure which is set up to minimize costs. Too much social proximity may weaken the innovative capacity of firms due to an overload of trust while too little social proximity lacks the mechanisms to reduce opportunistic behavior. The best solution put forward to avoid negative consequences is to ensure mix of socially embedded relations and market relations.

The fourth kind of proximity is the institutional proximity. This is seen as common values, norms, habits, routines or laws that regulate the way the actors interact with each other. Institutional proximity thus enables stable conditions for interactive learning. Too much proximity is unfavorable for new ideas while too little can lead to opportunism.

Finally Boschma mentions the geographical proximity which refers to the spatial distance between the actors. He underscores that geographical proximity is not sufficient because learning requires at least cognitive proximity in addition. And he points out that other kinds of proximity can serve as substitutes for geographical proximity. He claims that geographical proximity is neither a sufficient nor necessary condition for innovation to take place. But he

underscores that the geographical proximity can indirectly stimulate the other forms of proximity. Too much geographical proximity can lead to inward looking regions who lose their innovative capabilities while too little geographical proximity can lead to missing out on spatial externalities.

I will now turn to the analysis chapter. Here I will first use the concepts outlined in the theory chapter to define what kind of network, knowledge and innovations we are looking at in this case. Then I want to challenge the association made in this chapter by discussing tacit knowledge, trust, buzz and coordination mechanisms in this global network. I will do this in the framework of Boschma's alternative proximity categories.

5. Analysis

It is a fact that many investigations have concluded that innovative firms seem to be clustered.

In this thesis I am not going to argue against the fact that co-location is important, and even vital, in many situations. My aim has been to investigate if a global network would be able to make innovations, despite all the factors put forward as vital for an innovative environment, which favors localized collaboration. I wanted to do this to get a more nuanced view on what was possible to achieve in such a network and what was not.

There can be situations where the possibility for co-location does not exist, and where it would be interesting to know what is achievable and what is not, across space.

As we saw in the previous chapter, I stated a dichotomy which I mean is implicit in the theory I outlined:

<i>Local</i>	<i>Global</i>
<i>Synthetic</i>	<i>Analytic</i>
<i>Tacit</i>	<i>Codified</i>
<i>Strong ties</i>	<i>Weak ties</i>
<i>Incremental</i>	<i>Radical</i>

In this analysis I want to challenge the associations made in this dichotomy.

The first issue I want to discuss is how tacit knowledge is diffused in this global network. The advantage of global networks is often seen as the ability of presenting novelty, but not to be an arena for close collaboration. Trust is seen as a vital premise for good collaboration, and it has been stated that trust is not possible to build or maintain in a global network. How trust is built in this network is the next concept to be discussed in the analysis. A body of literature has stressed the notion of buzz and has claimed it to be a central advantage of a local network. As we saw, others have later questioned this. I will, however, argue that it may be important and I want to show how buzz is prevalent in this case. Finally a global network obviously needs to have a strong coordination in order to be able to achieve something. I will also describe how this is happening in this case.

In the analysis I will use three of Boschma's proximity categories as headings. Under the heading of cognitive proximity I will discuss the diffusion of tacit knowledge since this is seen as relevant for the ability to exchange this kind of knowledge. Under the heading of social proximity I will discuss trust and buzz and under institutional proximity I will discuss the coordination mechanisms that operate in this case.

I did not find Boschma's organizational or geographical proximities useful here since organizations are not a central entity in this case and since it was the substitutes to geographical proximities that were the focus of attention.

Before turning to the analysis I will start with defining this case according to the literature as this is important to realize in what situations the findings in this thesis can be said to be relevant and valid.

5.1. Defining the case within the theoretical framework

This innovation must be defined as a product innovation. The product is the Koha application which is a library software-system, and the process I have been following is the development of this product. Secondly this must be viewed as an incremental innovation. Library systems already existed and the development in this case was made by combining knowledge of how a library system ought to work and the new internet technology available. This made it possible to create a library internet-application as opposed to a local stand-alone-system. It thus builds on already existing knowledge. I will claim that there are two knowledge bases in question here. The first knowledge base relates to the technical knowledge that is needed to produce this software. This is typically analytical knowledge and it is majorly codified. The other knowledge base needed is the user's knowledge of how they work and what they need the system to do. The initial reason for me to look at this specific case was that in such innovations the transfer of tacit knowledge is seen as vital, and I was curious as to how they were able to do this in a global network. This knowledge is based on user experiences and must be seen as synthetic knowledge. The knowledge is normally tacit and even when the user-needs are codified in Request for Proposal's (RFP's) for instance, much knowledge remains unarticulated. Finally we must state that this network is definitely a global network, consisting of developers (vendors) and customers (libraries) who are located around the world.

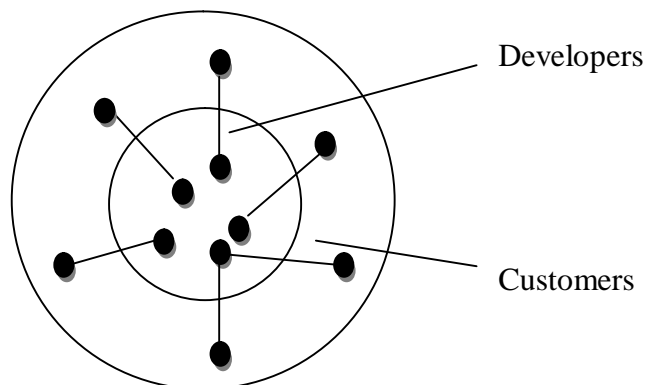
5.2. Cognitive proximity

The first alternative proximity concept I will look at is the cognitive proximity. Cognitive proximity means that people sharing the same knowledge base are able to communicate and learn from each other. (Boschma 2005; p. 66)

I will argue that we in this case actually have two networks, where one is a subset of the other. The smaller network consists mainly of developers while the broader network consists of both users and producers (developers). This is also reflected by the fact that there are two mailing lists in this community. The developers have an own mailing list called 'Koha-devel' and not least they have regular chat-room meetings where they join in to discuss their technical issues. Although these forums are primarily meant for developers, they are open for anyone to join.

I will first discuss how tacit knowledge is exchanged in the smaller network and then look at diffusion of knowledge in the whole network. The reason for this is that the mechanisms used to ease the diffusion of tacit knowledge in this global network differ between these two parts of the network.

The Koha network



In the developer-network, the work that needs to be done is the development of software. This includes writing the program code, making sure that the new code or functionality does not

conflict with existing code or functionality, and to make sure work is not done twice. The knowledge needed to do this is i.e. the understanding of technical system architecture and knowledge of the system language. This knowledge we can define as highly codified, majorly analytic, and context independent.

This part of the open source network is clearly a *Community of practice*. Compatible with Boschma's view of cognitive proximity, the actors in these communities, sharing the same knowledge base, are able to communicate on a rich level even in a global network. This means that since the knowledge base they share is quite codified, and that they have the same skills and expertise, the communication between the developers is getting less challenging.

The broader network includes both developers and users, and then we lose the effects related to *communities of practice*. These two groups do not share the same skills or profession and here we have the typical user-producer interaction. The most important knowledge that needs to be diffused concerns the knowledge of what the users' work consists of and what the further needs for functionality are. It is a well known fact in the ICT-business that there is a lot of insecurity in projects involving communication between users and developers. This is due to the fact that a lot of the knowledge being transmitted is misinterpreted or that some essential information is not even transmitted since the users conceive it as implicit, even though it is in fact new to the developers. A relatively new framework for running software development projects, called Scrum³, has gotten popular in the ICT-business. One of the main issues this method has taken into consideration is the repeated misunderstandings⁴ that occur between users and developers, and the method stress the need for strong interaction between these two groups. Just because the phenomena of Scrum and the open source communities are

³ Scrum is a framework for software development projects which is based on the Lean Management Philosophy

⁴ To underscore how difficult it is to exchange contextual information, a Scrum course I joined started by doing an experiment. One team can see a whiteboard with very few figures like triangles, circles and squares that differs in size, position and pattern. They are then supposed to describe this in text to another team who has not seen this board. From these instructions the second team shall try to draw what the first team has written. It was striking to see how hard this exercise was. None of the results in the tests I joined were very close to the original. This experiment was used to show how hard it is to express contextual knowledge in text and deliver it in the right manner so the receiver will be able to copy it.

happening at the same time I found it curious how one of them would stress closer interaction while the other was actually succeeding by working in a global network, communicating with the users on a distance.

After having studied this case and interviewed the most leading Scrum expert in Norway⁵ I realized that the two phenomena, Scrum and Open Source, can fit perfectly well. Even though the Scrum-framework repeatedly stresses that the essential aspect for success in software projects is the close interaction between users and developers, they do not claim that this needs to be physically close interaction. The Scrum philosophy preaches that it is better to start working on the problem quite immediately, and not wait until one has grasped the whole richness of the situation. This means developing something quite fast after the first understanding of what the user needs, then continuously ask for feedback from the user until the user is satisfied with the result. This technique is based on a belief that no matter how long you try, you will never get the total picture and if you do, the situation has probably changed. Thus a strategy of building -stone-on-stone is chosen, where you very quickly get a product to base further discussions with the customers on. Even though the product first produced in Scrum is a fully working product the process still resembles the way development is done in Koha. In Koha they use prototyping to get an object to base further discussions on.

Prototyping as a method has been used for a long time in ICT-projects. There are several kinds of prototyping, varying from a sketch on a paper to a semi-functioning application. In the latter case, parts of the user interface and the navigation between the pages are developed, while all the logic behind it is not. In this way the user can get a very realistic feeling of how the system works.

It seems like the need for transferring tacit knowledge in the global network is eased by using this method. And the reason, I would say, is twofold. Firstly, prototyping is actually a way of codifying tacit knowledge. It can be compared to a situation where you explain all the

⁵ Geir Amsjø is the first certified Scrum trainer in Norway

functions you want in your new house, the architect can come back with either a sketch or a small model and it would be easy for you to detect what is not understood by the architect, and thereby not solved. But from discussing this as a subjective imagination till having a physical object to build the further discussion on, is a major leap. And text will never be able to capture the richness of the prototype. It is like the saying that "a picture says more than a 1,000 words". Thus, the first effect they get from the prototyping, which eases the transfer of tacit knowledge, is the possibility to codify the knowledge in a "mini model" instead of words. Another aspect with this technique is that the focus is not on the user's need to diffuse his tacit knowledge but rather on how the developer's, often poor, knowledge of the situation is implemented. Instead of discussing the needs you discuss the solution. In this way, some of the tacit knowledge may actually never be received or understood by the developer, but his solution has unconsciously captured the user's need anyway. Thus, prototyping gives the advantage of being a superior technique for codifying context-dependent knowledge where it is easy to detect what is not understood. Secondly, it can also make the diffusion of the tacit knowledge redundant in some situations, since the ultimate goal is the solution and not the diffusion of the tacit knowledge.

There is one precondition for the above mentioned mechanisms to work well in a global network, and that is of course the existence of the internet. Without the internet it would not be possible to exchange the prototypes and the feedback in a reasonable time. Even more important is the fact that without the Internet, the semi-functioning prototypes would not be possible, as they would have to be installed on the local machine which may demand the physical presence of the developer.

We have now identified two networks and seen that the knowledge in these networks comes from different knowledge-bases, I will thus claim that software industries, who I understand is often perceived as being a synthetically based industry, are in fact based upon both synthetic and analytical knowledge-bases. In the developer network the knowledge being exchanged is mostly based on an analytical knowledge base and is highly codified. In the broader network the knowledge exchanged is tacit and comes from a synthetic knowledge base. The synthetic knowledge base (user needs) can still be seen as the primary driver for innovation in this

industry, but the analytical knowledge (program languages i.e.) are the tools which gives both inspiration and opportunities that lays premises for the further innovations.

One of the developers also underscored that one of the things he liked about this way of working was the 'paper trail'. This is a codification of all communication and the developer stressed that both for him and for the users the act of 'putting things on paper' was an awareness-building process in itself. And although this may not lead to fewer misunderstandings in the communication it made it easier to detect what the misunderstanding was based on, which helped them moving on quicker.

An important aspect to note is that this became an open source-system after an intense period of development done in a local network. In the beginning of creating a new system there are a lot of basic decisions to be made and a massive amount of knowledge to be exchanged, and the way of solving the needs have, at this moment, no frames. Brainstorming is a central activity in this phase. According to one of the actors who participated in this period this could not have been done if they were not working in geographical proximity. If prototyping would be sufficient in that situation is hard to say but it cannot be stated from this case study that this would not be possible in a global setting, but it is easy to assume that activities involving a high amount of brainstorming will be easier when the actors are co-located.

We have now seen that communication between the developers functions well due to the fact that they are a 'Community of practice'. This makes them have the same cognitive understanding of the situation. We have also seen that the use of prototyping as a technique and the Internet as a medium enables the tacit knowledge to be codified, or sometimes it even makes this knowledge superfluous. This gives them the necessary cognitive proximity to communicate. So I do not agree with those authors who claim that situations where tacit knowledge needs to be exchanged are dependent on face-to-face contact.

The ability to exchange tacit knowledge is however not the only central issue for a good collaboration, according to both the literature and the interviewees. The need for knowing and

trusting the person they collaborated with was put forward as an important factor. We will thus turn to look at the social aspects that seemed vital in this community.

5.3. Social proximity

As we saw both in the knowledge section and network section, trust has been a keyword to explain how collaboration and communication can function well. Trust is seen to enable cooperation and to reduce complexity in situations where individuals must act with uncertainty. (Panteli 2005; p. 1) It has also been seen as vital to commit people and create a dynamic network. I referred to several authors who claimed that trust was not possible to develop, maintain or repair in a virtual network.

In Jarvenpaa and Leidner's case study (1999) they defined virtual teams as temporary, culturally diverse, geographically dispersed and electronically communicating work groups. One of the conclusions from their study was that, under certain circumstances, it was possible to achieve swift trust. This could however not be compared with how trust was built in a local network.

One thing I will oppose to is the understanding of virtual teams as necessarily temporary. In the case I studied they are at this very moment planning their 10th year anniversary. Most, if not all, of the people who entered this community in the beginning are still there. When repeatedly asking the interviewees what was the most important thing in building a good relationship and a good cooperation they consistently stated that a long relationship was more important than having met in person. As one of the developers answered when I asked this question: "will trump a short in person relationship". By asking what he meant he stated that "long relationship is always better than a short one, even if the short one is in person and the long one is virtual". Another developer confirmed the same view: "For good virtual communication, it is important to know each other well. It does not matter how that is achieved, through meeting, other shared interests or simply time and experiences on the

project.ö So I think that, firstly, it is wrong to perceive virtual networks or teams as temporary. It is true that virtual networks rapidly can be put together because of the lack of geographical limits, but this is an opportunity given by this technology and should not be used to explain these teams as temporary by nature. Secondly I will argue that the understanding that ötrust needs touchö, as Handy (1995) put it, should be reformulated to ötrust needs timeö.

Another aspect I wish to stress is that when comparing F2F communication and virtual technology it is important to take into consideration new available technology and all the features this has to offer. We could see that Storper and Venables (2007) explained that one of the superiorities of F2F was its ability for both actors to send messages simultaneously. They refer to Nohria and Eccles (1992) to underscore this. In 1992 the chat room technology was developed, but probably not very common. When using IRC, like they do in the Koha-community, or any other chat-room technology, both actors can send messages simultaneously. And this offers of course a very different way of communication than the asynchronous communication as i.e. e-mails. I will thus stress the importance of not using an understanding of old technology to build general truths on how virtual communication is happening.

This leads us over to the next issue, because it is not only the communication technology that has been further developed. Around the new technologies user öroutinesö are also established. Firstly, the above mentioned technology leads way to a quick and responsive way of communication. In the IRC-logs I have gone through there is a lot of humor and situation comedy present. They have also developed a way of simulating body language using ** around the word to underscore that it is not a verbal statement but a physical. Examples we find throughout the chat-logs is *nod*, *applause*, *hand over a virtual cup of coffee* etc. Finally they have a simple mechanism for distinguishing the actors from each other in the chat room meetings, by the actors representing themselves with different colors. So one actor has a green background on his text, another has blue etc. Another custom is to write the name of the user you want to answer, or comment on, first in the sentence. In a chat room meeting with many participants communicating in a synchronous manner it can be hard to keep track on

who answers or comments on what, the use of colors and names makes it easier to follow the communication.

Both the technology and the routines are of course important to master, to be able to use this form of communication. Since I have mostly talked to the developers in this study, I would assume that part of the reason for the positive feedback on this form of communication is due to their familiarity with both the technology and the behavior related to it. My own experience when interviewing the developers and the user pointed to the fact that the developers were more tuned into this way of communicating. When discussing with the user we were constantly interrupting each other which led to situations where one part is asking a question while the other is talking about something quite different. I will believe that this happened since none of us were expert-users on this technology. So I believe that actors who are not very familiar with the technology or the behavior related to such communication will not be able to have the same fluent communication. It is important to note, however, that this is probably going to be a quite familiar way of communication for a broader part of the population, as the social media, like MSN and Facebook offer the same kind of chat technology. This means that these skills will probably evolve even more in the general population.

The longevity of the project, the possibilities of the new technology, routines developed and the skills of the actors can all be seen as important to create social proximity which creates a trustful and dynamic communication.

So I believe that trust, which is the central aspect in this connection, is possible to both build and maintain in a virtual network which I mean is shown in this case. The actors themselves stress the time spent and not the physical meetings, as important for building trust. Since I do not see a virtual network as necessarily temporary, and that both technological tools, routines and skills, related to this technology has evolved dramatically, I will claim that a dynamic and trustful communication is fully possible to achieve virtually.

There are, however, some circumstances present that possibly makes trust less important here than in other situations. Firstly, even though the developers cooperate on building the same system, they normally work on different features that are not dependent on each other. This means that if one developer does not fulfill what he planned to do, the only one affected by this is normally the developer himself, or the organization he represents, and the customer paying for the feature. It is of course not a wanted situation for anyone but the others can normally go on and accomplish their own tasks. This means that the trust-factor is most prevalent between the customer and the developer, which is also according to the impression the customers gave.

When continuously asked if there was any time they lacked the possibility of communication in physical proximity, the one situation that was mentioned was in sales meetings. The developer could not read the immediate reactions of the customers in a virtual chat- or email-correspondence. This can be linked to Asheim et al distinguishing between knowledge and information. What this developer was lacking in the virtual communication was not targeted knowledge about what the customer wanted him to develop, but rather information about his reactions in a strategic sales meeting. And although this can be important in many situations, it is not seen as a crucial in producing innovations in synthetically or analytically based industries. And this is also a situation that is not characterized by trust in F2F-meetings.

Another aspect I want to discuss under the heading of social proximity is the notion of buzz. As we have seen, several authors have stressed this as an important factor for innovation, and they have argued that it is a local phenomenon. Asheim et al separated it from the F2F communication and described it as a non-deliberate scanning of the environment where actors receive i.e. rumors, impressions and recommendations. In that definition of buzz, it can be useful in searching new sources of information ó but not useful for exchanging the targeted knowledge that is to be diffused. Asheim et al thus argued that buzz was of minor importance in both analytically and synthetically based industries. Even though I do agree with Asheim et al that this is not the primary source of useful knowledge in synthetically based industries, I will argue that it is not difficult to find examples where buzz have been important in shaping innovation projects, also in synthetically based industries. In larger firms, where the different

departments don't have an overview of all the projects in the other departments, I believe we can find examples of situations where actors have gotten informal information by the coffee machine that has revealed that two departments can benefit from collaboration. If we use Schumpeter's definition of innovation, and view it as a recombination of already existing knowledge, I will argue that this buzzing is a way for different knowledge pools to meet, and thereby be combined. However, even if one can discuss the degree to which buzz is seen as important or not, I want to argue that buzz is prevalent in this case. This is also in line with Asheim et al as they argue that buzz can be transmitted F2F or electronically.

In this case buzz is happening in the chat-rooms. In the central chat-room in Koha they have both formal and informal meetings. The formal ones will be discussed under institutional proximity. The informal ones consist of all kinds of small chats from questions asked to issues being discussed. I will argue that this kind of chat differs from face to face buzzing in two central aspects. Firstly, a major advantage of this chat is that it is actually 'buzz with recording'. As mentioned above all communication done electronically leaves a paper trail. This means that you do not have to be there when the communication is happening. You can enter the chat room later on, and be able to read all that has been communicated there. The new social media, like Twitter, works in quite the same way. But in Twitter you can even tag the keywords you want to follow, in that way you get an alert every time your keyword is mentioned. The second issue in which it differs from face to face, is that when entering the room you have normally made a huge selection of communication partners in comparison to meeting people arbitrarily in the hallway or by the coffee-machine. This could give the physical buzz an advantage in being a source for radical innovations, while electronically mediated buzz can be seen as more advantageous for incremental innovations since you in the virtual community have entered an environment of people sharing much of the same knowledge as yourself.

I will argue that buzz is definitely happening in a global network while having some advantages and some disadvantages compared to buzz exchanged in a localized environment.

5.4. Institutional proximity

Boschma draw on Edquist and Johnsen (1997) to define institutions as "sets of common habits, routines, established practices, rules or laws that regulate the relations and interactions between the individuals and groups" (Boschma 2005, p 68).

When building a software application, a huge challenge is to make all the parts function together, which is necessary for the whole system to work. Strong coordination is needed to manage that. As we saw previously there are a lot of techniques made up to imitate the social behavior in a local network, this includes both the humor and the way of simulating body language for example. There are also a set of guidelines and rules prevalent in this case that regulate the interaction between the actors on several dimensions. Some of these regulating mechanisms are actually technological systems, some are institutional processes like electing the leader, and some are norms that everyone is supposed to follow, although it is not put down as a "law".

In this case much of the coordination is strongly manifested in systems which must be learnt when entering the community. In the bug tracking systems everyone reports on both what bugs and new features they are working on. If there is a conflict related to this the developers gets in touch with each other to clear up any technical or functional conflicts. It forces through a habit of documenting everything that is done. As one of the interviewees stated: "some people learn it the hard way - when they work on a feature and someone commits the same thing before them - usually they learn pretty fast to tell people what they are doing from that point on".

In addition to the bug-tracking system, they have documentation and guidelines on how the standard way of coding and commenting is supposed to be. They even have an interactive "translator" where they can ask about abbreviations or other issues when there is something they do not understand. This translator is "behaving" like a person when asked. I was actually not sure in the beginning, when this was demonstrated to me, if he was actually asking another actor or a system. When the system did not understand what he was asking him it

finally replied *ōI suckō* as a response to not being able to help. As we can see, to a long extent the tasks that would normally be fulfilled by a coordinating person are in this case manifested in technological systems and a system of documentation. There are, of course, always situations where this is not sufficient. When newcomers try to orient themselves or anyone has a practical question about something they have the online chats, and not least e-mail lists with a lot of activity and a very quick response-time on any questions asked. In these e-mails and chats both the norms and the expectations of how things are to be done is continuously being communicated.

Even though there is no formal leader of the community, there is a need for someone to take on the task as manager for every new release. In these cases they arrange *town hall meetings*. This is virtual meetings in the chat-room, where anyone can join to elect who they wish to take on this role. The person chosen in this meeting is then in charge of delivering the next feature and thereby make the decisions as to when this will happen, what features that will be delivered in time for this version etc. So from basically having no formal organization they constitute one virtually, in the situations they need it.

One other striking thing in this community, and probably in many open source communities, is how strong the values and norms are communicated. There is at the moment, a massive e-mail communication concerning how one vendor was perceived as withholding code to benefit themselves and their customers. Some of the customers in this vendor's group reacted very negatively and sent the internal e-mail correspondence done by this vendor into the open Koha email list. There was a lot of reactions to this, condemning this way of participating in the community. I also found an earlier instance where another vendor had actually gotten their name deleted from the Koha web pages as a sanction for doing something similar. They had obviously complied since they were now back on the list, and actually in this last email-correspondence assured that they would do nothing of the sort. So the notion of this community as a sharing community is very strong, and anyone opposing or not abiding to the rules is met with condemnations and sanctions.

From this we can see that, even in a virtual community, it can be developed a strong culture that regulates how behavior is supposed to be conducted. The developers I talked to confirmed that it was much harder to communicate with the newcomers, and they explained this both by culture and abbreviations. When entering and accepting this culture I presume the actors also get a stronger commitment to the network, which is manifested both in their motivation and enthusiasm in participating in the network. In Jarvenpaa and Leidner's article, the participants (students) often seemed to lack both enthusiasm and motivation. I believe that in a situation where the participants is told to collaborate in a global network, and even having a task which they may be more or less committed to, you will not be able to get the effect of commitment and motivation that we find in the Koha community. In this case they have entered the community voluntarily, they want to be a part of the culture, they have a clear perception of what they are doing there, and since they stay they probably like what they are experiencing. Thus, a study with actors not voluntarily attending, and maybe with an unclear task, cannot necessarily be used to show that a global network is not able to create the same level of dynamic and commitment as a local network.

5.5. Implications on the dichotomy

Since I claim that the collaboration in this network actually functions quite well, I want to criticize the notion of synthetic and tacit knowledge being so closely linked to local networks. I will argue that on the horizontal dimension, the effect of being a "community of practice" facilitates the exchange of tacit knowledge. On the vertical dimension, which concerns the communication between users and developers, there is an even higher degree of tacit knowledge to be exchanged. This is due to the fact that the developers need to learn and understand the users' experiences to be able to develop a suitable solution. In this case, the prototyping technique facilitates the exchange of tacit knowledge. It would maybe be even easier to exchange this knowledge in a local environment, but this technique makes it possible for them to overcome this barrier.

I also oppose to the association between strong ties and local networks. As we have shown here, the relationships between these actors have lasted for a long time, and they claim themselves that the most important aspect is the longevity of the relationship and not the geographical proximity. In addition the chat room offers a social arena for small talks which can be compared in several ways to the random social meetings that happens when people are geographically co-located. So I strongly believe that strong ties between the actors can be achieved in a global setting.

This leads me to question the associations between local networks and incremental innovations, and global network and radical innovations. I claim that since these kinds of networks are able to diffuse tacit knowledge, and since they are able to build strong bonds between the actors, incremental innovations are also compatible with global networks. The Koha case is, obviously, an example of a global network doing incremental innovations.

I will argue that all the associations done in the dichotomy relating to local networks are also compatible with global networks. This means that both the diffusion of tacit knowledge derived from a synthetic knowledge base, the building of strong ties and the development of incremental innovations all are achievable in a global network.

This also leads to an optimism that the characteristics associated with a global network (weak ties and novelty) can be combined by the strengths associated with a local network, which is the ability of transferring rich tacit and synthetic knowledge. The concept of local buzz and global pipelines have already addressed how a local network can benefit from connecting to companies outside their own cluster, to get introduced to novelty. I believe that global virtual networks can offer some of the same opportunities as the literature of local buzz and global pipelines are seeking; the combination of the good qualities of both local and global networks.

5.6. Premises relevant for the success of this community

There were some circumstances present here that may be vital for such a global, virtual collaboration to take place. Firstly, the developers in the network were normally not dependent on each other to complete their tasks, although the customer was of course dependent on the developer they had paid to develop the new feature. But this means that the whole group was not affected if somebody did not comply with what was agreed upon. Secondly, the brainstorming phase was not done in a global network and especially the user claimed that this phase would be hard to conduct if not co-located. Thirdly, I will not term this collaboration as very strategic. The actors in the network seldom benefit from withholding information, although it happens, or to give a false impression. Thus, these findings cannot be generalized to situations where the actors have a more strategic relationship. Fourthly, the participants in this network had willingly entered the network and this way of working. This means that their motivation for communicating this way was probably high. And finally, related to this is the fact that the actors in this network are familiar with both the technology and the behavior related to virtual communication. Actors who are not so familiar with this technology would probably not be able to communicate in such an efficient manner.

6. Conclusion

In this thesis I argue for a more positive view on collaboration in global innovation networks than much of the literature in innovation theory. This view is based on the case study of the library system Koha.

I have chosen to discuss four central topics that have been used to defend local communication as superior to global communication. These four topics are (1) the diffusion of tacit knowledge, (2) the building of trust and strong relationships, (3) the existence of buzz and (4) the need for coordination. I have chosen to do this under the headings of three

of Boschma's alternative proximity dimensions of the cognitive, the social and the institutional proximity.

Under the heading of cognitive proximity, I discussed the diffusion of tacit knowledge. Cognitive proximity is concerned with the ability of the actors to understand and interpret knowledge, and the ability to learn from each other. On the horizontal dimension the effects of being a 'community of practice' represented the necessary cognitive proximity for the actors to have a rich communication. On the vertical dimension the technique of prototyping served as a mean to codify tacit knowledge in a way that made it possible for both developers and users to have a fruitful communication. In this case it was the way of codifying and objectifying the knowledge that gave them the same 'vision' which was necessary to facilitate the communication.

Under the heading of social proximity, the notions of trust and strong relationships are central. My argument is that virtual teams are not necessarily temporary, but can be rather stable over time. This has been an argument put forward as a negative aspect, which supposedly makes it hard to build trust in global virtual teams. The interviewees clearly stated that time, and not physical meetings, are crucial for building relationships, which contradicts Handy's statement 'trust needs touch'.

Also, today's technology offers synchronous communication, and routines, behavior and skills related to such technology are developed. This communication was characterized by quick remarks and a lot of humor, and resembled a verbal communication in many aspects. As well as it offered ways of communicating non-verbal statements. Together this forms a situation where personalized and rich communication and 'buzzing' is possible.

Finally, under the heading of institutional proximity I discussed the rules, norms and coordination mechanisms prevalent in this case. There is of course a need for strong coordination in such a network, and we noticed there were several different systems and rules introduced to handle the coordination between the actors. In addition, the chat rooms were in some situations defined as a 'town hall' where meetings were held to elect the manager for the

next release and to discuss different matters. This institutional framework was obviously a carrier of the norms and values of this community. The common values, and the relative homogeneity of the group, create an environment of motivation and enthusiasm rarely found in more traditional office environments.

Based on these findings, I argue against the dichotomy that a local network is a necessary condition for creating a synthetic knowledge base with a high degree of tacit knowledge, strong ties, and incremental innovation. The Koha case clearly shows that this can be achieved just as well, and in some areas maybe even better, in virtual global networks.

I have identified some premises present in the Koha case that may be essential to explain how this 'virtual' community has become a success.

The first crucial aspect is the nature of the tasks to be developed. Even though a software application is an intricate system, where all the parts need to interact with each other, the tasks itself are often not dependent on another person's immediate effort. In this sense, the components are quite modularized. A situation with a stronger need for working closely together may require a different type of trust than the one built in this virtual network. However, nothing in the Koha case indicates that the trust is less strong than in the local networks.

Secondly, the first development phase was in the Koha case done in a local setting on New Zealand. In this phase, brain-storming and swapping of ideas are important activities. If it would be possible to do even this phase in a virtual setting cannot be answered by this case study.

A third aspect is the motivation of the members of the community. They have entered this community willingly, by their own personal choice. If they were told by an employer to work this way, the effects may be different.

And finally, the fact that this group is familiar with both the tools and the routines used in such a communication, laid the premises for rich and complex communication. A situation where the users were unskilled may have given another result.

This is a single-case study only, and it would be interesting to see if other cases will support the same findings. It could also be interesting to look at other kinds of networks where brainstorming was done globally, and where the dependency between them is higher.

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Appendix 1 – Interview Guide Developers

Practical questions

1. When was the work of the last version started?
2. Who defined what the version will consist of?
3. When and how is it specified who will work on this version?

Process questions

4. Specification phase: How are the user-needs communicated to the developer?
 - a. Do they normally send this wish to the list or do they contact a vendor they know?
 - b. Do the users normally send a full specification with a proposed solution or a more superficial description of a function he wants to get supported?
 - c. Do you need face-to-face meetings after having received the wish to be sure they are understood?
 - d. What kind of knowledge do you typically need from the customers? Is it their experience of how the working process goes or more facts like how many books they keeps, how many customers they have etc?
5. Design phase: Can you describe the phase when you work out your solution?

How closely do you interact with the users?
Are you co-located in this phase?
If not, how are you able to avoid misunderstandings?
Do you use prototyping?
Other things?

6. Development phase: How close do you interact with customers in this phase?

7. Test phase: Who and how is it decided what has the quality to be a part of the version that is to be publicized?

8. Can you categorize the kinds of features possible to make with and without physical meetings?

9. Do you experience misunderstandings in the communication with the users that would have been avoided if you were situated at the same spot?

10. What is important to succeed with a new feature?

- a. To understand the work of a librarian?
- b. To meet customers face-to-face?
- c. Prototyping or other techniques?
- d. Other things?

Appendix 2 – Interview Guide Customers

Practical questions

1. When did you join the project?
2. Your role is solely being a customer?
3. How many people were involved in the project in the beginning?
4. Have anyone been there for the entire 10 years?
5. How big is the kernel group?
6. Amongst active members, are there many coming and leaving or is it quite static?
7. Have you specified new features where the dialogue between you and the developers has been based on e-mails and chats and not physical meetings?

Process questions

1. Specification phase: How are the user-needs communicated to the developer?
 - a. Has this changed from the first phase till now?
 - b. Do you think it be possible to do the first phase virtually?
Or do you need a frame to do this development in the virtual world?
 - c. On what form, and how is the new user-need described?
 - d. Do you need face-to-face meetings after having communicated the requirements to be sure they are understood?
 - e. What kind of knowledge do you usually have to give to the developers in this phase?
Is it your experience of how the working processes are or more facts like how many books you have, how many borrowers etc?
 - f. Is it some kind of knowledge that is easier to convey face-to-face than virtually?

2. Design phase: After the developers have received a new specification, what happens?
Do they come up with a prototype i.e., or do you need to communicate face-to-face?
How closely do you interact with the developers? Are you collocated in this phase?
If not, how are you able to avoid misunderstandings?
3. Do you experience misunderstandings in the communication that would have been avoided if you were situated at the same spot?
4. What is important for the developers to succeed with a new feature?
 - a. To understand the work of a librarian?
 - b. To meet customers face-to-face?
 - c. Prototyping or other techniques?
 - d. Other things?
5. When people in this network are localized all over the world, does that mean you get access to more information than you would otherwise? That you get updated on things happening both in UK, New Zealand and France for instance?
6. There seems to occasionally be some disputes about withholding of code to get a competitive advantage. Does this lead to a change in how information is being diffused? Does everyone share the same expectations as to what is right and wrong?
7. How well do you know the people you communicate with:
Have you met in person or have you known each other for a long time?
And what of the two previous would you say are more important for creating a good communication? ÷
8. Would you say that there are more misunderstandings with the new developers than with the old?
Can there be things you communicate that they don't pick up on because they don't

know the ölingoö?

Is it easier to speak with people you have known for a long time?

Does it take a long time for newcomers to get into the group?

9. How close do you get, on a social level, working like this?

Can you get a deep trustful relationship in the virtual world, similar to one in the real world?

10. Does the background from different countries or cultures in any way challenge the trust and communication between the member

Appendix 3 - Meeting transcript from IRC channel 5 Aug 2009

<gmcharlt>gmcharlt = Galen Charlton, release manager

<dbirmingham>I want to be in Sydney

<jdavidb>jdavidb eq J. David Bavousett, PTFS

<jransom>Joann Ransom. Horowhenua Library Trust. NZ

<jwagner>jwagner = Jane Wagner, PTFS

<chris>chris = chris cormack, translation manager 10pm here :)

* nicomois Nicolas Morin from BibLibre

<slef>slef = MJ Ray, software.coop

<sekjal>sekjal: NYU Health Sciences Libraries

* schuster joined

<IrmaCalyx>irmacalix = Irma Birchall from CALYX information essentials

<dbirmingham>=> David Birmingham, PTFS

<paul_p>paul_p = Paul Poulain, France, from BibLibre, representing hdl, (3.0 RMaint), that

is in vacation

* Colin joined

<savitra>savitra, Nucsoft OSS labs..hello all

<magnusenger>= Magnus Enger, Libriotech, Norway

<chris_n-2nd>chris_n_2nd (&& chris_n) = chris nighswonger, FBC

<Colin>Colin pyfs-europe Ji

<kf>Katrin Fischer, BSZ - leaving in half an hour, will log chat

<schuster>schuster = David Schuster Plano ISD Plano TX

<mason>= mason james, new zealand

<kmkale>Koustubha Kale Anant Corporation Thane India and www.granthalaya.org

<indradg>indradg == Indranil Das Gupta, L2C2 Technologies, Kolkata, India... hi all

<Amit>Amit Gupta Nucsoft osslabs

<gmcharlt>ok thanks to all attendees, especially those getting up early or staying up late to attend

<gmcharlt>the page for this meeting on the wiki is

<http://wiki.koha.org/doku.php?id=meetingnotes09aug05>

<paul_p>(or is hungry because it's lunch time :D)

<gmcharlt>and the agenda items are

<gmcharlt>1. Update on Roadmap to 3.2

<gmcharlt>2. Update on Koha 3.0 Roadmap

<gmcharlt>3. Follow-up on actions from General IRC Meeting 1 July 2009

<gmcharlt>4. Management of KohaSocialNetworks
<gmcharlt>5. Tutorials for new contributors
<gmcharlt>so without further ado
<gmcharlt>there has been some craziness recently
* Wizzyrea_ joined
<gmcharlt>but I will say this, and no more
<gmcharlt>I join with everybody in applauding LibLime for their contributions to Koha
<gmcharlt>and encourage many more fruitful years of a global collaboration on a great open source ILS
* ruth joined
<gmcharlt>so moving on to specifics
<gmcharlt>thanks to hdl, we're getting closer to having a stabilized new_acq branch ready to push out to head
<gmcharlt>I encourage people to check out (or even checkout) the koha-biblibre.git tree hosted on git.koha.org
<gmcharlt>and also note the use of a new topic branch for their SOPAC stuff
<gmcharlt>which will be another good addition
<chris>*nod*
<Wizzyrea_>biblibre++
<gmcharlt>last meeting I said that would would declare feature freeze at the end of the August
<gmcharlt>so now, to (re)set a firm date
<paul_p>the SOPAC stuff could probably be added quickly on main trunk, as it has strictly no consequences on the rest o fKoha
<paul_p>note also that on biblibre branch, there are a LOT of other new features than new acq
<paul_p>let me summarize a few of them :
<gmcharlt>feature freeze I'm calling for the end of the day, Sunday, 6 September 2009
<gmcharlt>paul_p: please wait a second
<paul_p>ok
<gmcharlt>that will give time for us to discuss any last minute stuff at the next IRC meeting (which will be 2 September)
<gmcharlt>before feature freeze
<gmcharlt>ok, paul_p, please go ahead
<chris>sounds good to me
<paul_p>I wanted to point that there are a lot of other new features, not only new_acq.
<paul_p>we have counted, that's something like 350 patches
<paul_p>200 for new_acq, 150 for the others new features
<paul_p>for example :
<paul_p>- move an item from a biblio to another one (in case of a mistake)

<paul_p>- merge biblios
 <paul_p>- add basket facilities to staff (like in OPAC)
 <paul_p>- enable many export format for biblios
 <paul_p>- interactive merge of biblios
 <schuster>*applause*
 <paul_p>(all of them sponsored by Aix-Marseille universities)
 * Wizzyrea_sends a sleepy cheer from NEKLS
 <sekjal>paul_p: we were just thinking of an item-moving tool... that's excellent!
 <jransom>you guys are great - well done
 <paul_p>and many more, that I don't remember atm
 <chris>do you think you would be able to do a page listing them?
 <kf>biblibre++
 <gmcharlt>other cool stuff that I hope gets in before feature freeze
 <paul_p>chris, no, I think we MUST do a page listing them ;-)
 <chris>paul_p++
 <gmcharlt>* labels rewrite by chris_n-2nd
 <Wizzyrea_>Aix-Marseille++
 <gmcharlt>paul_p: yes, you must, I command it :)
 <gmcharlt>* sysprefs editor by pianohacker
 <mason>FYI: i have a recent interactive-merge tool from kapiti-libraries
 <paul_p>gmcharlt: sir, yes sir !
 <gmcharlt>* RFID stuff from slef and gang (yes? pretty-please)
 <slef>gmcharlt: yes, can do
 <jransom>we hungry for rfid stuff too
 <mason>and a bunch of devs/features ready to get committed
 <gmcharlt>plus bunch o'stuff from PTFS
 <mason>chris_n, thanks for the labels tidy-up too!
 <slef>jransom: we're using TRF7960 chips bit I also had it working with another one. What's yours?
 * chris_n-2ndfeels like a kid in a candy shop
 <slef>s/bit/but
 <gmcharlt>in conjunction with all of the new stuff, I have a couple requests re bugs
 <jransom>techlogic
 <jransom>Chris is our Guru :)
 <gmcharlt>first, I am calling for a concentrated effort for people to close out any bugs that are actually fixed
 <slef>ok, will follow up later so hopefully we can make it work with all three :)
 <gmcharlt>second, I'd like interested people to go through and start marking bugs that are potential blockers and criticals
 <gmcharlt>the blockers and criticals I'm particularly interested in are:

<gmcharlt>* UTF-8 issues
<gmcharlt>* circ stuff, for which we really need more automated test cases
<gmcharlt>I'd also like to propose a couple bug-squashing sessions
<gmcharlt>perhaps one this month if we can fit it in
<gmcharlt>and one or two after feature freeze
<chris>bug squashing sessions are fun
<paul_p>in october, BibLibre plans to organize an internal hackfest/coderun (1 week with all developpers working on koha).
<gmcharlt>as far as the roadmap is concerned, obviously with what's going on it's a bit uncertain what will make it into 3.2 as such
<gmcharlt>so I'll be deciding based on the calendar
<gmcharlt>and setting up a post-3.2 branch for pushing any new features submitted after feature freeze
<paul_p>gmcharlt: this month, matts is working on new_acq, to improve some things and fix some bugs (full time)
<gmcharlt>if we end up with a flurry of submissions after 6 September, I may reconsider the feature freeze, but only if we're looking a bunch of submitted stuff that's complete, not just work in progress
<chris>that sounds sensible
<gmcharlt>as far as roadmap page is concerned, I'll be editing with my best guesses and information about what will end up in 3.2
<chris>hopefully in the next week or 2 we might get a clearer idea of what will make it in
<gmcharlt>and although it's a little too soon to discuss in great detail, we'll need to think about the next version, whether it will be a 3.4 or a 4.0
<chris>i guess it depends on how much makes it into 3.2
<gmcharlt>i.e., 3.4 = more incremental changes, 4.0 = the re-architecting that varous of us have been making noises about for the past year
<slef>also whether we want to make any earth-shattering changes
<chris>my one point would be
<chris>that if we do do a 4.0
<slef>maybe during the freeze we should poll users, once they can see the probable featureset of 3.2?
<chris>we should be careful to make sure we do plenty of interim releases
<chris>good idea slef
<gmcharlt>related to features
<gmcharlt>I also call for active Koha devs and vendors to publish public git trees with well-organized topic branches
<gmcharlt>for their work in progress
<davi>the problem is lose customer
<davi>due to bad competence behavior

<paul_p>davi: lose customer ???

<gmcharlt>I will be very happy, and feel ever-so-slightly like Linus, if I get to merge in at least one new feature in 3.2 via a pull request

<schuster>When will you decide on a release manager as that will impact if it were a 3.4/4.0 would it not?

<chris>not really

<slef>I think choosing 3.4 or 4.0 will impact on the RM choice

<schuster>ok

<matts>;

<davi>paul_p, say I have a EDIFACT work in progress. I would like to resell it to two or even 3 customers before publishing it

<paul_p>schuster: there will be something after 3.2, for sure, so we will need a new RM anyway ;-)

<gmcharlt>schuster: I imagine that discussion will start in September, at least formally, but don't imagine a decision being made before October unless somebody jumps in raring to go with a good proposal for 3.4/4.0

* kfleaving now - plz add my vote to git tutorials for beginners later :)

<paul_p>davi: 1- someone else may publish some EDIFACT work before you release it. 2- that would be much more complex to deal with, from a technical point of view. But all those 2 problems would be yours

<gmcharlt>given the state of flux, I now don't expect to do a 3.1-alpha tarball until right after feature freeze

<gmcharlt>before we move on to 3.0 update from paul_p, questions about 3.2?

<davi>paul_p, If I publish my work in progress it would be a lot lot more probable that someone else publish some EDIFACT work before I release

<indradg>paul_p++, release-early-release-often

<slef>gmcharlt: any idea how soon will you update roadmap3.2?

<chris>davi working in secret always causes more problems than it solves

<davi>I know chris, but I fear a lot :(

<paul_p>davi: that would be good news for you, as you could get benefit too !

<slef>davi: need to structure payment carefully so you get paid for developing, not for supply. But this isn't much of a 3.2 issue.

<gmcharlt>slef: I'm giving myself a deadline of 12 August for that

<slef>gmcharlt: noted. thanks.

<davi>ok slef

<slef>no more Qs from me

* greenmang0 joined

<gmcharlt>ok, on to you paul_p

<gmcharlt>btw, hdl++ for releasing 3.0.3

<paul_p>hdl finished the 3.0 / head reconciliation. So a 3.0.4 should be ready soon. it includes all bugfixes & some improvements that LibLime already deployed on some customers (thus the name "reconciliation branch").

<schuster>Again I might request people to enter enhancements they are "working on" in bugs.koha.org so everyone knows they are being enhanced or can connect with interested parties.

<paul_p>with 3.0.4, we can have 3.0.x branch going his way, and head going his way

<paul_p>before leaving for vacation hdl called for some tests on 3.0.4

<paul_p>dunno if he had some feedback, i don't read his mails ;-)

<chris>i have the branch running here

<paul_p>he will be back next monday

<chris>havent hit any big obvious errors

<paul_p>I think he will "string freeze" and ask for translation quite quickly

<paul_p>and the translation process should not be too long, as there are not zillions of string changes

<paul_p>(my feeling, did not check any numbers)

<chris>yeah there arent many changes

<paul_p>I don't know when 3.0.4 can be published. But would be good to have it in september (early, or middle ?)

<gmcharlt>paul_p: I vote for early

<paul_p>me too, but that will depend on translator speed i think

<gmcharlt>yep

<chris>we need to give translators at least a week, preferably 2

<chris_n-2nd>paul_p: the labels rewrite is being done over the 3.0.x code base and so should apply easily to it if you are interested

<chris>so we can try to get some of the other languages finished too

<schuster>Is there a write up of the label rewrite someplace so some of us know what is involved?

<paul_p>chris_n-2nd: in theory, it's interesting. But a lot of new features could be added too. So I think it's better to concentrate on new features for 3.2

<gmcharlt>chris_n-2nd: I'd prefer that it go into 3.2 first

<slef>schuster: brief discussion on mailing list last week

<paul_p>(that's almost the same question jwagner just asked me privately !!!)

<paul_p>3.2 should not be that far, so I prefer having all the features into it

<jwagner>Yes, I haven't been through a major release yet. What would be the target timing for 3.2 release?

<chris_n-2nd>schuster: basically we are shooting for the same level of functionality as currently exists for starters

<gmcharlt>jwagner: after feature freeze, about a month for intensive bugfixing + translators getting started

<slef>jwagner: freeze early September and then it depends how quickly you/we test and fix the remaining bugs

<gmcharlt>then a string freeze, and translations finishing up

<gmcharlt>so ideally, late October

<chris_n-2nd>schuster: minimal new features (like single label printing) will be added and bugfixes on this round

<gmcharlt>but as slef says, the bug count will ultimately drive the timing

<slef>jwagner: past major releases are not an indicator of future performance, happily.

<jwagner>OK, that's good to know for planning. Thanks.

<gmcharlt>at any rate, I don't plan to release with open blockers

* mjkaye joined

<gmcharlt>anythign more to say about 3.0?

<paul_p>gmcharlt: no.

<gmcharlt>(back in a minute - time to wake up my wife)

<paul_p>but something about 3.2

<schuster>Great code...)

<paul_p>if i'm not mistaken, noone at BibLibre has written the script to updatedatabase smoothly for new_acq, for libraries that uses acquisitions in 3.0. So, it basically means : you'll loose all your acquisitions stats. hdl should work on that this month I think/hope

<paul_p>s/mistaken/mistaking/

<jwagner>paul_p your new acq does not include EDI, does it?

<gmcharlt>back

<nicomo>jwagner: no it does not

<gmcharlt>paul_p: yeah, make that update work will definitely be a blocker bug for 3.2

<paul_p>jwagner: right, there's nothing about EDI (not requested by SAN-OP, that sponsored new_acq)

<jwagner>OK, thanks.

<gmcharlt>so on to next agenda item

<gmcharlt>action items from last meeting

<gmcharlt>1. the welcome message for the Koha mailing list is in fact - thanks to nengard and everybody who worked on drafting it

<gmcharlt>2. slef: any luck munging the wiki edit log for the relicensing?

* nengard joined

<gmcharlt>hi nengard

<paul_p>davi: just FYI => the SAN-OP funding for new_acq was not complete, something like 50%. but it improves global quality of Koha, so we think it will be easier to convince libraries to use it, so more incomes for BibLibre

<nengard>hiya - I assume I missed the meeting :(

<paul_p>hey...

<paul_p>gmcharlt leave to wake up his wife and ... nengard arrives. are those events related ?

<gmcharlt>nengard: we're on agenda item #3, so still in time for your #4 and #5

<paul_p>:D

<gmcharlt>paul_p: umm, no :)

<chris>nengard: no koha meeting has ever taken less than 1 hour :)

<davi>I know paul_p

<slef>gmcharlt: not yet, but hope to start the process between now and next meeting. Seemed a good idea to let it run into the academic year anyway.

<gmcharlt>ok

<gmcharlt>there was discussion of making loose guidelines for command-line script argument processing

<nengard>chris i have been on meetings that are less than an hour :) but glad i made it in time for some of the agenda

<nengard>sorry for oversleeping

<gmcharlt>somebody made the change to the coding guidelines on the wiki, and as they seem fine and I haven't heard any problems with it, they stand

* chris_n-2ndhands nengard a cup of virtual coffee

<gmcharlt>interim 3.1 alpha didn't happen, obviously - as I said earlier, will do an alpha tarball after feature freeze

<gmcharlt>I still have admin access to bugs.koha.org, so will be working on some of that sometime this month, though it will be a sideline to working on 3.2 itself

<gmcharlt>and I think that's it for #3, unless people have questions

<gmcharlt>if not, #4 is management of Koha Social Networks

<gmcharlt><http://wiki.koha.org/doku.php?id=kohasocialnetworks>

<gmcharlt>nengard: that's your agenda item, so please go ahead

<slef>gmcharlt: nengard: I added it

<gmcharlt>slef: oops, ok, you go ahead then :)

<nengard>slef - didn't think it was me :)

<slef>basically, what are we doing? Are we allowing almost anyone into all of them?

<slef>or should some of them be limited to users and developers?

<nengard>here's the link to the ones I knew of: <http://blogs.liblime.com/open-sesame/archives/662>

<slef>nengard: I copied that to the wiki.koha.org and added some more I think

<nengard>slef I have been letting anyone join them but admins are only developers and users

<nengard>thanks slef!!

<gmcharlt>I think it would be a good idea to put the list of the admins for each network on the wiki page

<nengard>also slef and I worked on updating the Yahoo Pipe to add some sites I had missed so those are now going out to the kohails twitter users

<slef>ok - and when do we remove someone? (spam?)
<nengard>gmcharlt I can do that
<slef>basically we need to be singing from the same song sheet on this, minimally
<nengard>we can remove them for spam - are we getting any on any of the networks -
<gmcharlt>slef: to propose a guideline, if somebody's contributions on a particular network
are not majority Koha related, they can be removed
<nengard>seems that most people who join these things are looking for us to give them info
<gmcharlt>obviously, any viagra spam or the like can be shot on sight
<nengard>hehe
<slef>gmcharlt: ok. What do others think of that?
<chris>works for me
<nengard>i'm fine with it - except that there are some networks we can't remove people from
<indradg>gmcharlt,++
<nengard>if someone uses the koha hashtag on twitter with viagra spam - I can't stop them
<slef>nengard: can you label which those are?
<Wizzyrea_>fine by me
<nengard>slef - twitter is the only one that comes to mind - I will have to look into the others
- as i've never had to remove anyone before :)
<slef>I think we don't have any yet, but shall we say that networks which are just koha users
and developers are "social" and don't have the "majority Koha" requirement?
<nengard>slef++
* chris_n-2ndheads off to work
<slef>heh, there's <http://identi.ca/peopletag/koha> but it doesn't have many members yet
<gmcharlt>slef: sounds good to me
<Wizzyrea_>slef++
<nengard>slef will join when meeting is over :)
<slef>ok... nengard and slef to coordinate update of the wiki page
<gmcharlt>slef: I don't know if it's been an issue for the planet, but if say somebody has a
general blog where they talk about Koha 25% of the time and other stuff 75%, that may be a
candidate for encourage them to make a topic-specific feed
<slef>gmcharlt: yes, we've done that
<gmcharlt>ok
<slef>both mine and chris's are like that - maybe others are too
<nengard>I too have koha specific feeds
<chris>i have topic feeds
<gmcharlt>good enough
<chris>i dont think the planet is using it tho
<gmcharlt>anything more on social networks?
<nengard>and just as an FYI - for the Pipe I always picked the Koha feed if there was one
<jransom>(off to bed - night all)

<nengard>nothing more from me on social networks

<paul_p>bye jransom.

<nengard>sleep tight jransom

<slef>nothing from me

<gmcharlt>ok, last agenda item, organizing tutorials for new contributors

<nengard>that was added by me

* jransom: LEFT Quit: <http://www.mibbit.com> ajax IRC Client

<dbirmingham>Interested

* nengardhas a pup scratching at her feet to let her out

<davi>for Git, just link to <http://progit.org/book/>

<nengard>davi i learn better when i see things in action

<gmcharlt>davi: I think the idea was for something a little more interactive, where a few

Koha old hands would show newbies the ropes

<nengard>i was thinking of us being able to join a webinar or screensharing session of some sort

<sekjal>me, too. plus, we have local Koha practices on top of what Git can do

<davi>that book is completely free, updated and a very very basic introduction

<nengard>i want to help out, but i have to admin i'm scared I'll mess something up

<gmcharlt>heh: <http://www.indexdata.com/blog/2009/07/poor-mans-screen-sharing>

<nengard>so i only do small patches right now

<slef>gmcharlt: erm, been doing that for aaages :)

* Wizzyrea_is in the same situation as nengard

<gmcharlt>so it looks like we have a few things to decide

<gmcharlt>topic - Git & Koha Git usage seems to be it

<pie>hi guys, just thought I'd say hi and say something about new contributors

<nengard>I'd add -- topic - file locations and editing the db

<Colin>Some folk find <http://gitcasts.com/> useful

<pie>I mean, I'm happy with Git but with Koha, it's kinda hard where to know where to start :)

<gmcharlt>who - I volunteer to help facilitate (and pontificate), but would like another volunteer or two

<sekjal>a summary of our coding guidelines would be good as a reminder, as well

<pie>I got it up and running once, but wasn't sure what to look at next

<nengard>sekjal maybe someone can put that on the wiki - that's something I can read :)

* jdavidbisn't half the guru that gmcharlt is, with git, but is always willing to share what he knows.

* nengardbe careful with jdauidb he can be mean!! :) hehehe

<gmcharlt>so topic 2: how to navigate Koha's codebase including file locations

<paul_p>jdauidb: sometimes, "half geeks" are easier to understand for "true newbies"

<gmcharlt>nengard: what do you mean by editing the DB?

<jdauidb>Only to you, nengard. :P

<jwagner>I have a Webex account -- we could probably host a session.

<paul_p>i've had hard time starting with git, because I found only "high level" tutorials

<nengard>gmcharlt sorry distracted - i meant how to edit the codebase when it alters the database - example there are typos in the syspref definitions that I could easily fix if I knew where to go and what needed doing

<jdauidb>I've been cobbling together a cookbook-style tutorial here, that might be useful.

<gmcharlt>topic 3 - coding database updates

<slef>jwagner: isn't webex another blasted java application mislabelled as a webinar?

<paul_p>nengard: the syspref problem will be killed by jesse patches (but your core question still relevant)

* nengard giggling at slef

<slef>oh it annoys me

<jwagner>slef, dunno what drives it but I've used it successfully for years (training and individual troubleshooting)

<nengard>paul_p - yippppppppeeeeeee

<indradg>slef, and prolly one has to pay to use webex?

<gmcharlt>indradg: hosts do, users do not

<slef>if it's called a webinar it should work in a web browser without downloading applications

<indradg>gmcharlt, thanks... didnt know that

<slef>which usually aren't available and aren't cooperatively-developed

<nengard>I mentioned earlier that WebHuddle and DImDim are open source options

<chris>i think a lot can be done in an irc session

<nengard>but I have never been able to get the VOIP parts of them working

<paul_p>i've a mail from him asking how to translate the file he plans to do. It's just a yaml file

<nengard>chris - I really need/want to see the screen as the edits are made - it makes all the difference to me

<paul_p>so, no more definitions in the DB itself (it was a stupid idea -from me iirc-)

<chris>where someone picks a bug, and fixes it, talking people through what they are doing

<slef>IRC with a screen may be the simplest

<chris>yep

<paul_p>slef++

<nengard>slef++

<slef>could probably even have screen for those who want that and screencast it for those who prefer that

<slef>although I'm not up-to-date on screencasting

<joetho>jingo

<slef>I used x2x which was like 10 years ago

<slef>and timbuktou 15 years ago

<Wizzyrea_>joetho: it uses flash, expect protest

<nengard>hehe

<slef>Wizzyrea_: I don't mind as long as it's not the only route.

<nengard>i like the screencasting idea because we can record that and put it up for those who can't attend sessions and for future community members

<nicomo>nengard++

<paul_p>nengard++

<gmcharlt>well, I expect we can organize something that uses screen(1) as well as other screencasting options

<paul_p>nicomo already did some screencasts

<schuster>Nengard ++

<paul_p>(in french, for some customers)

<slef>I just feel it's wrong to expect people to use non-FOSS to get started developing FOSS

<paul_p>(very very usefull)

<chris>slef++

<nengard>paul_p was going to ask where they were - but unfortunately I don't know French :(

<slef>(eating our own dogfood IYKWIM)

<nengard>NEKLS has some awesome ones - but they're not about developement

<Wizzyrea_>it's too early for me to parse the intricacies of human social interaction.

<davi>instead x2x maybe we could try "Neatx NX server" which is a lot quicker in low connections

<slef>gmcharlt: "Sorry, you don't have enough rights to continue. Perhaps you forgot to login?"

<nengard>i have some FOSS screencasting apps bookmarked

<slef>gmcharlt: from wiki, which is odd because I've been actively editing during the last hour

<nicomo>beyond this particular issue with git I think nengard's point really is we need to do a better job helping non-coders help in, right?

<slef>nengard: can we pretest them?

<nengard>nicomo absolutely

<chris>and coders

<paul_p>nengard: try <http://www.bibliobazaar.com/node/112> for some example (it's about koha, so even if you don't understand french, you should understand the context)

<gmcharlt>slef: odd - there's a timeout, but I ubmped that up ages ago

<nengard>slef - don't remember - let me get you the links
<Wizzyrea_>well, if you have an army of semi-geeks able to fix typos that makes it easier, right?
<gmcharlt>slef: possible glitch in dokuwiki's OpenID support?
<slef>gmcharlt: can't be timeout because I've been editing. It's like there's some maximum session length.
<nengard><http://delicious.com/nengard/opensource+screencast>

<slef>gmcharlt: possible. Thought I'd let you know in case you get more reports.
<gmcharlt>slef: ok, thanks
<slef>nengard: ta
<gmcharlt>nicomo, nengard: what it sounds like this is becoming is a need for a series of tutorial sessions
<nengard>i'm up for that!!
<gmcharlt>possibly as something that's regularly scheduled
<nicomo>+1
<gmcharlt>monthly or bimonthly, perhaps
<Wizzyrea_>Koha Uni
<nengard>love it Wizzyrea_
<nengard>we can start a chanel on blip.tv and/or youtube
<nicomo>the Brand: start with a brand ;-)
<gmcharlt>Wizzyrea_++
<slef>chris: what's "welcome" in maori?
<chris>theres a bunch
<chris>nau mai
<nicomo>not too formal then
<chris>haere mai
<davi>gmcharlt, I would propose the creation of a mailing list specific to teaching, announce new screencasts, etc. because it is lot hard read all the email in the dev list
<slef>chris: "welcome to koha" or "invitation to koha"?
<nengard>davi I recommend instead a blog or a rss feed of some sort :)
<chris>watea, powhiri, pohiri
<nengard>too many mailing lists
<slef>blip.tv and youtube both work most of the time
<gmcharlt>davi: I think a koha-newbies list is a good idea, but for it to work, enough people have to commit to helping out on it for it to be effective
<davi>nengard, yes, something like that ...
<gmcharlt>otherwise, it will become ignored
<chris>Nau mai ki a Koha

<nengard>slef i was thinking of trying to reach out to the world using a popular tool :) we can post them on our own blog too

<chris>welcome to koha

<slef>Does everyone here know blog.gmane.org makes some of the koha lists available as blogs?

<nengard>we can set up a WP blog with multiple users accounts and we can all post our tutorials

<indradg>nengard, you can use Istanbul for doing the screencasting... can even do a voiceover

<nengard>oooo - can you tell i'm getting excited :) hehe

<dbirmingham>davi: I don't believe it would work

<Wizzyrea_>could also do something like the planet

<nengard>indradg these all have voice recording too:

<http://delicious.com/nengard/opensource+screencast>

<gmcharlt>slef: if we go with the blog route, is your offer to set up WP-MU blogs still open?

<Wizzyrea_>where peeople can add their feeds

<slef>(the links to blog.gmane.org have recently gone from koha.org I think)

<Wizzyrea_>for koha tutorial

<slef>gmcharlt: yes, I need to do it anyway (our job reference 1123)

<nicomo>I like nengard's idea of going where people are: blip.tv or youtube

<joetho>I think it is important to link to (and back from) existing sites, like koha.org

<davi>dbirmingham, we need some central point to post all the tutorial, etc. material

<slef>Wizzyrea_: our MU has FeedWordpress installed

<dbirmingham>Looks like reply fail for me. Sorry!

<joetho>too many websites !

<Wizzyrea_>nicomo: me too, fwiw

<nengard>hehe

<sekjal>so, its sounding like we're looking at asynchronous presentation of these tutorials. Is there still interest in a live presentation?

<sekjal>and if so, when?

<schuster>Could they not be linked from the development page?

<nengard>sekjal

<joetho>yes!

<nengard>yes

<gmcharlt>schuster: umm, I'm *not* in favor of disallowing links for any reason

<kmkale>yes please

<slef>joetho: you'll need to ask koha.org's editors about that.

<nengard>schuster gmcharlt we can put links all over the place

<nengard>but i like the idea of a central repository

<schuster>Well we are all koha.org editors now if you login are we not?

<slef>sekjal: presentation with live Q+A?

* chris*coughs*

<slef>schuster: did something change in the last week?

<joetho>nengard: yes, centralize

<nengard>schuster you are able to add if you login - and edit your own stuff - but not edit other stuff

<sekjal>slef: something like that, sure

<schuster>i LOVE central repository..

<gmcharlt>that gets recorded for posterity on blip.tv/youtube/and a central Koha Uni blog ..

<schuster>Ah sorry... I've been on vacation remember...

<davi>nengard++ for central repository, else it would be a nightmare of coordination

<nengard>hehe

<slef>learn.koha.org :)

<kmkale>central repo++

<nengard>okay - in the interest of time i say that I set up a page on the wiki where we can all get the specifics outlined

<Wizzyrea_>there ya go slef

<paul_p>slef++

<joetho>I also like the idea of a Delete Czar who can consolidate and streamline what is beginning to become a somewhat bloated web presence. If I may be so bold.

<davi>learn.koha.org ++

<nengard>i will post all of our suggestions and unanswered questions

<gmcharlt>nengard++ # wiki

<gmcharlt>slef++ # learn.koha.org

<schuster>Thanks to nengard the documentation guru...

<slef>nengard: can you link it from

http://wiki.koha.org/doku.php?id=meetingnotes09aug05#tutorials_for_new_contributors

please?

<chris>joetho: the *.koha.org sites?

<nengard>absolutely slef

<chris>joetho: or someone who goes round the web hackng peoples websites to remove stuff?

<slef>ok... if anyone who arrived late wants adding to

<http://wiki.koha.org/doku.php?id=meetingnotes09aug05#attendees> please tell me now

* chrisis unsure how a delete czar could work

<nengard>slef i arrived late

<schuster>Too much power.

<Wizzyrea_>me too

<gmcharlt>chris: well obviously you have to give the czar a big red delete button first

<ruth>me also
<dbirmingham>davi: I may have been off point. Early in my day for me :-)
<davi>slef, add me with my coop name
<slef>please tell me "Name, Organisation/Affiliation"
<gmcharlt>chris: whether you hook it up to anything is a different question ;)
<chris>hehe
<slef>so I don't embarrass myself getting them wrong ;-)
<Wizzyrea_>Liz Rea, NEKLS
<davi>np dbirmingham
<ruth>Ruth Vargas, Howard County Library
<nengard>slef: nengard = Nicole Engard / Koha Doc Manager/LibLime
<slef>Currently locked by: indradg
<slef>indradg: let me know when you're done, please
<davi>slef, "Davi Diaz, software.coop"
<indradg>slef, done.... was correcting a small typo
<gmcharlt>looks like we're winding down - any last minute stuff that anybody wants to bring up in the next two minutes?
* Wizzyrea_yawns
<slef>ok, anyone else needs to add themselves
<gmcharlt>*BONG*
<slef>or beg smeone else
<schuster>gmcharlt - great work... Now I'm off for more coffee and a shower and off to work!
<gmcharlt>thanks everybody for attending
<gmcharlt>next meeting will be 2 September - I'll send an email
<nengard>thanks all - sorry for being late
<nengard>but i'm very excited
<paul_p>thanks to everybody waked up early ;-)
<schuster>gmcharlt thanks again for being a great RM!